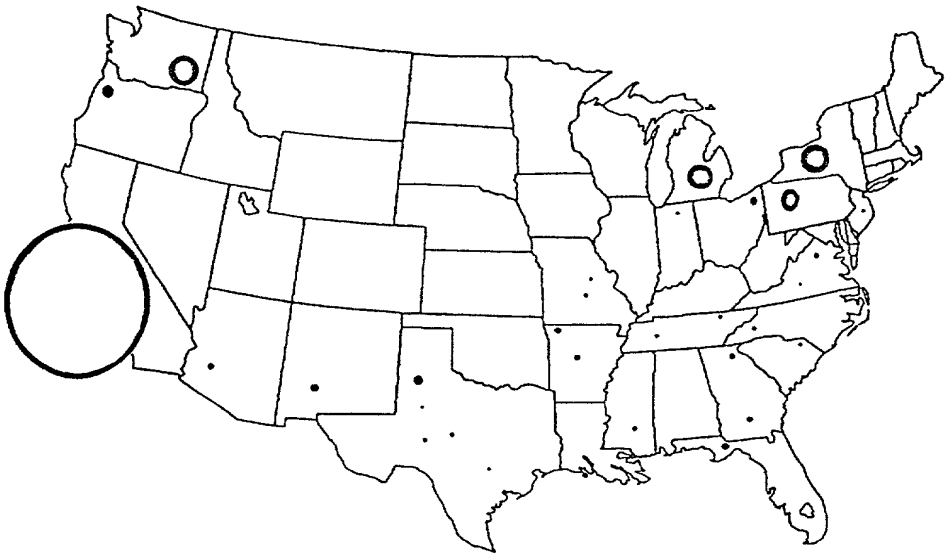


FIG. 1

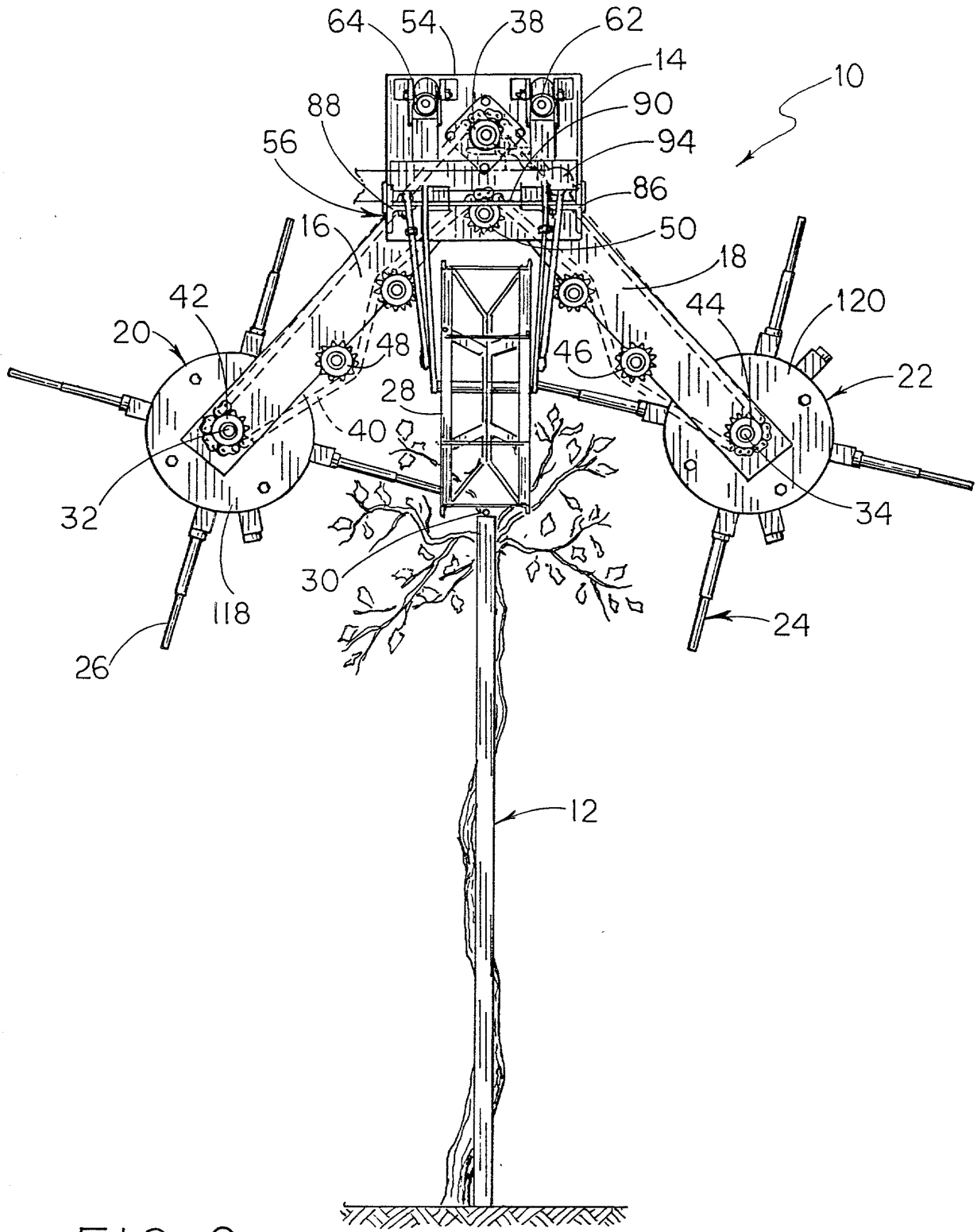

64
54
38
62
14
10
88
90
56
94
86
16
50
18
42
44
120
20
48
46
22
28
40
32
34
30
118
24
26
12

FIG. 2

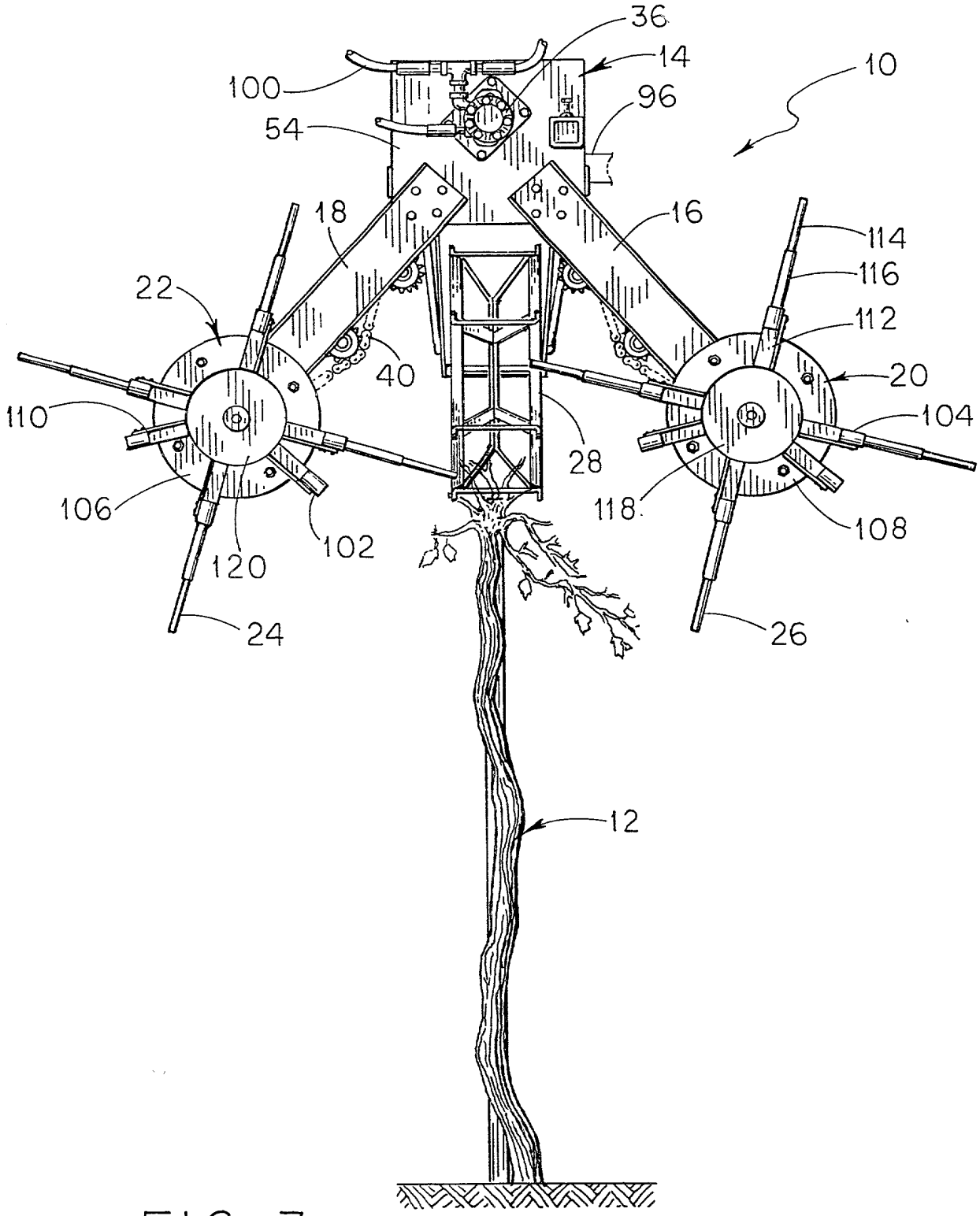

36
14
10
100
96
54
18
16
114
116
22
112
40
20
110
104
28
106
118
108
120
102
24
26
12

FIG. 3

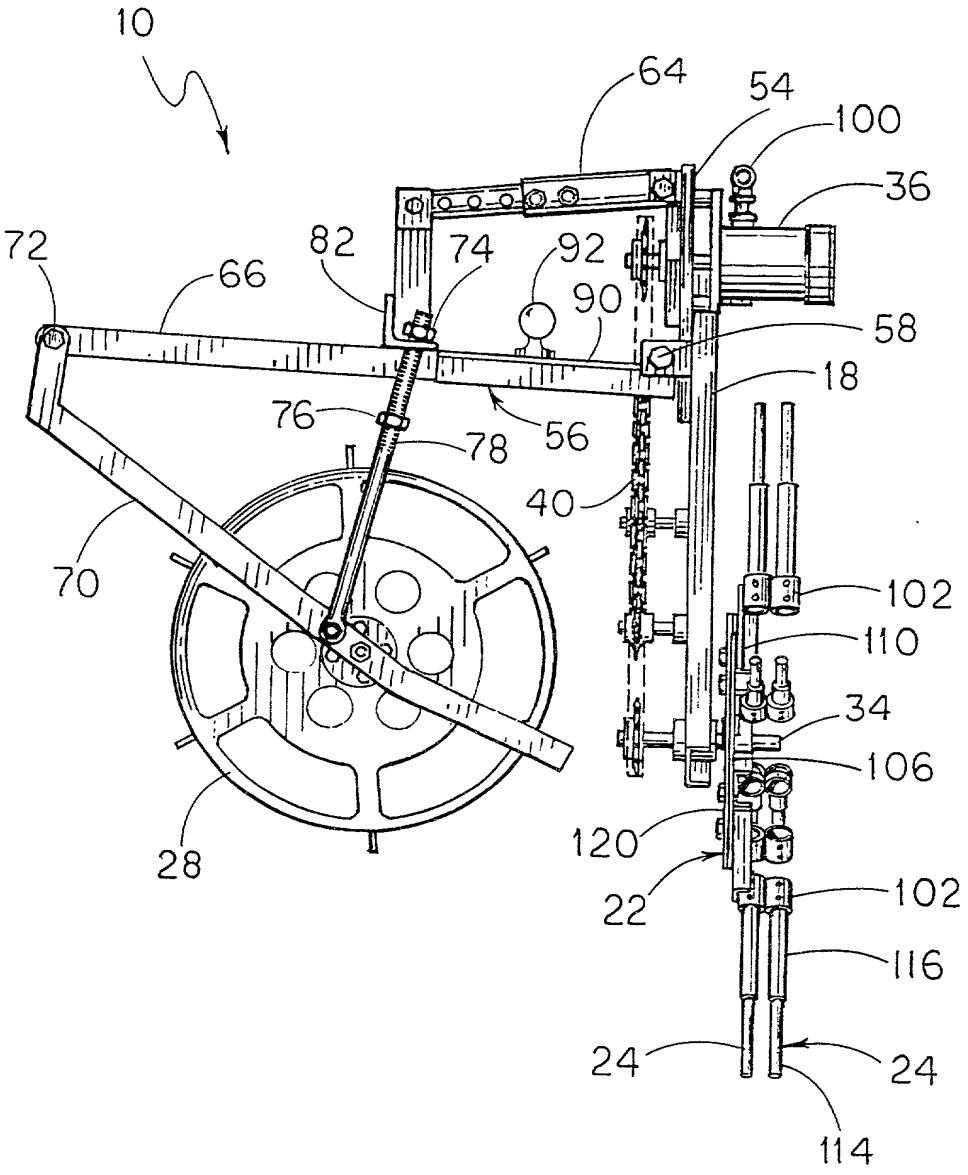

10
64
54
100
36
72
66
82
74
92
90
58
18
76
78
56
40
70
102
110
34
106
120
22
102
116
24
24
114
28

FIG. 4

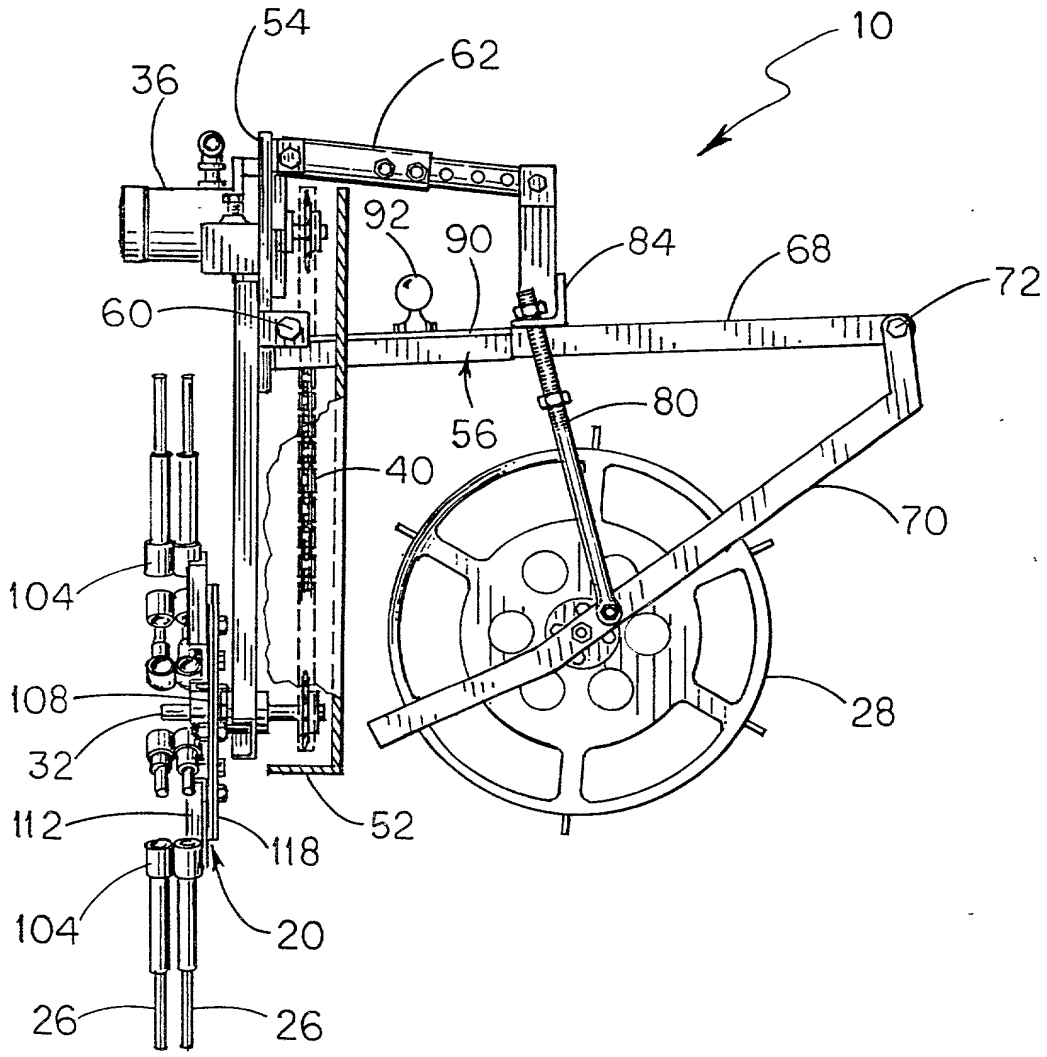

54
62
10
36
92
90
84
68
72
60
56
80
40
70
104
108
28
32
112
52
118
104
20
26
26

FIG. 5

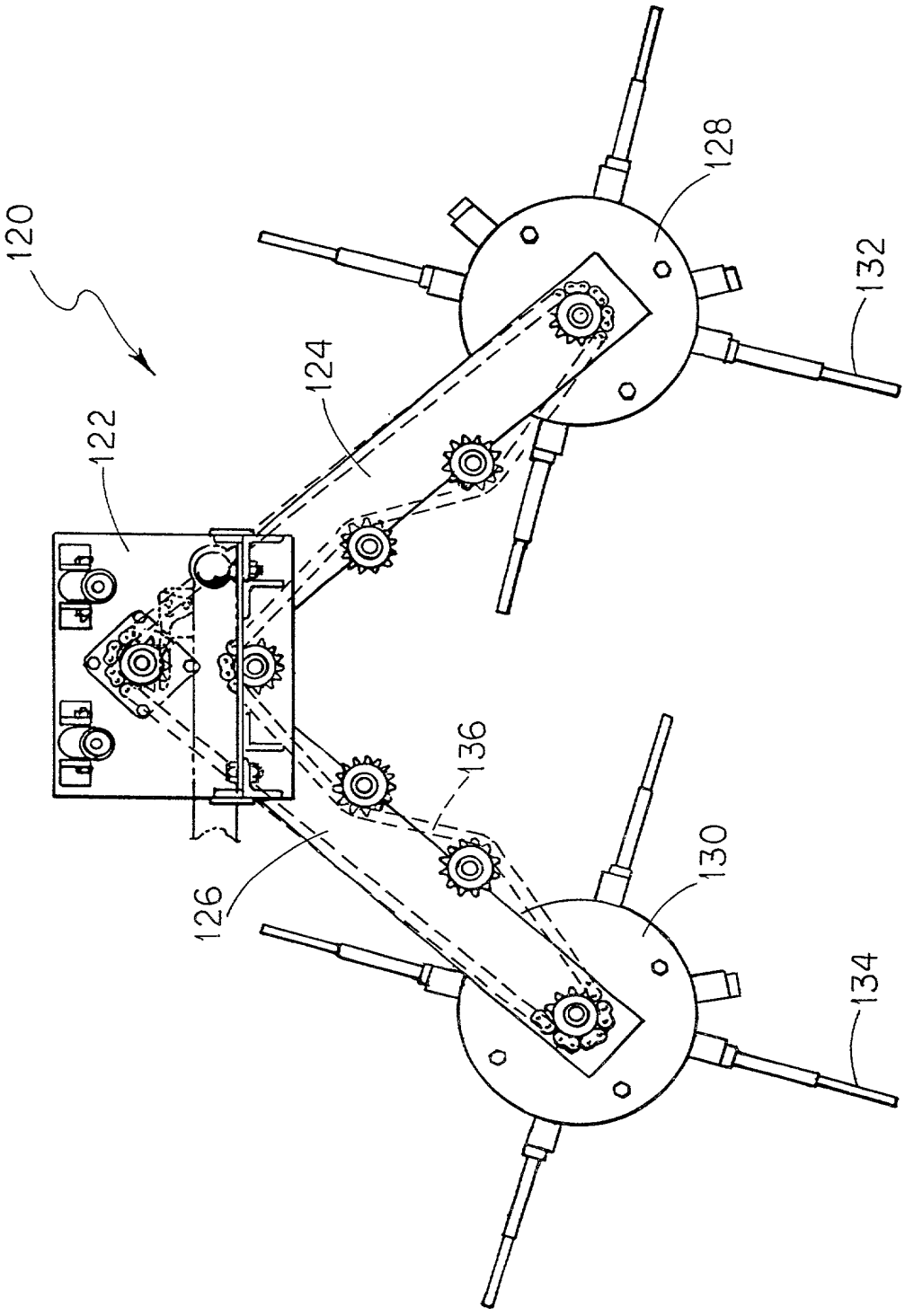


FIG. 6

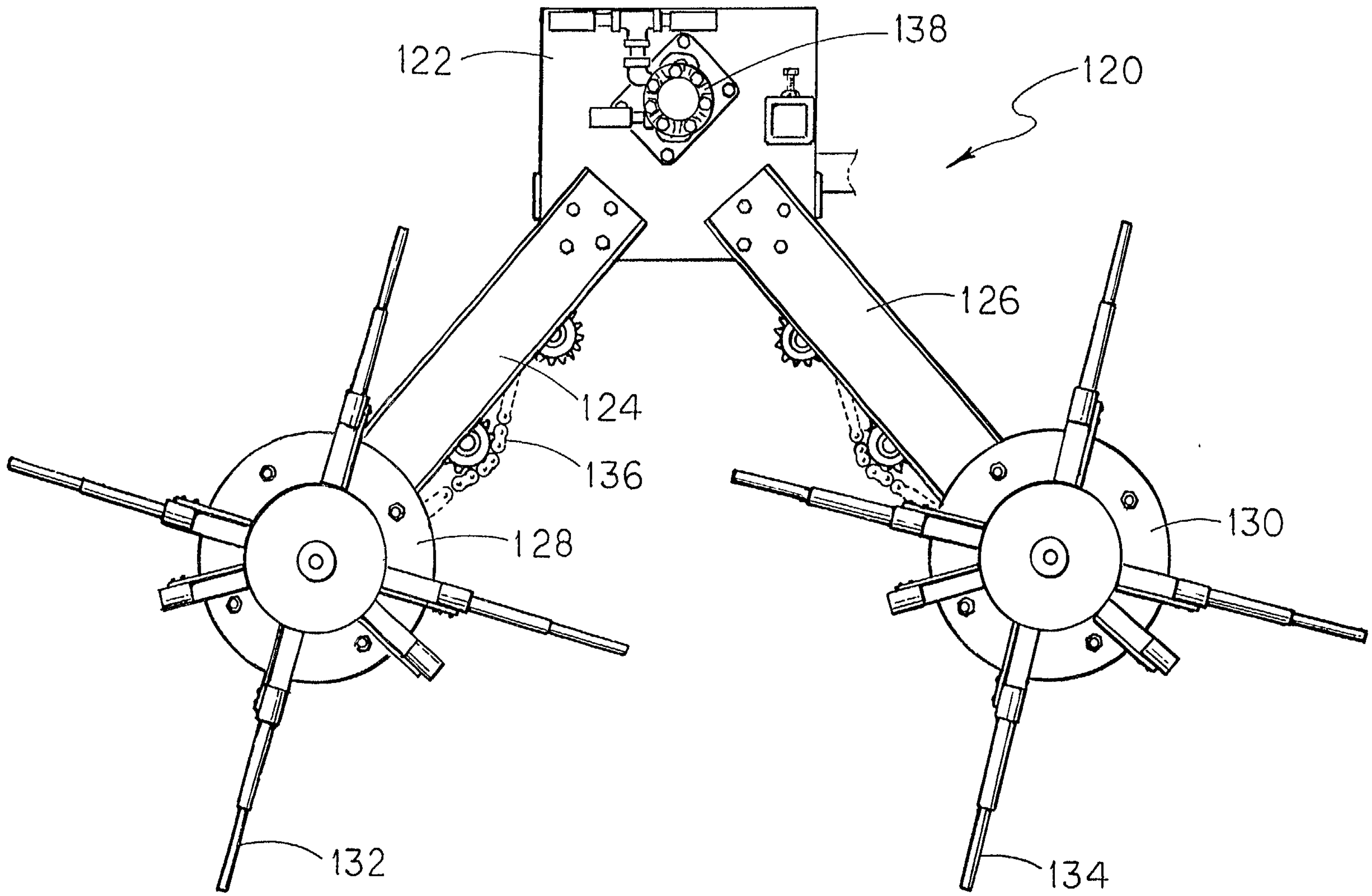
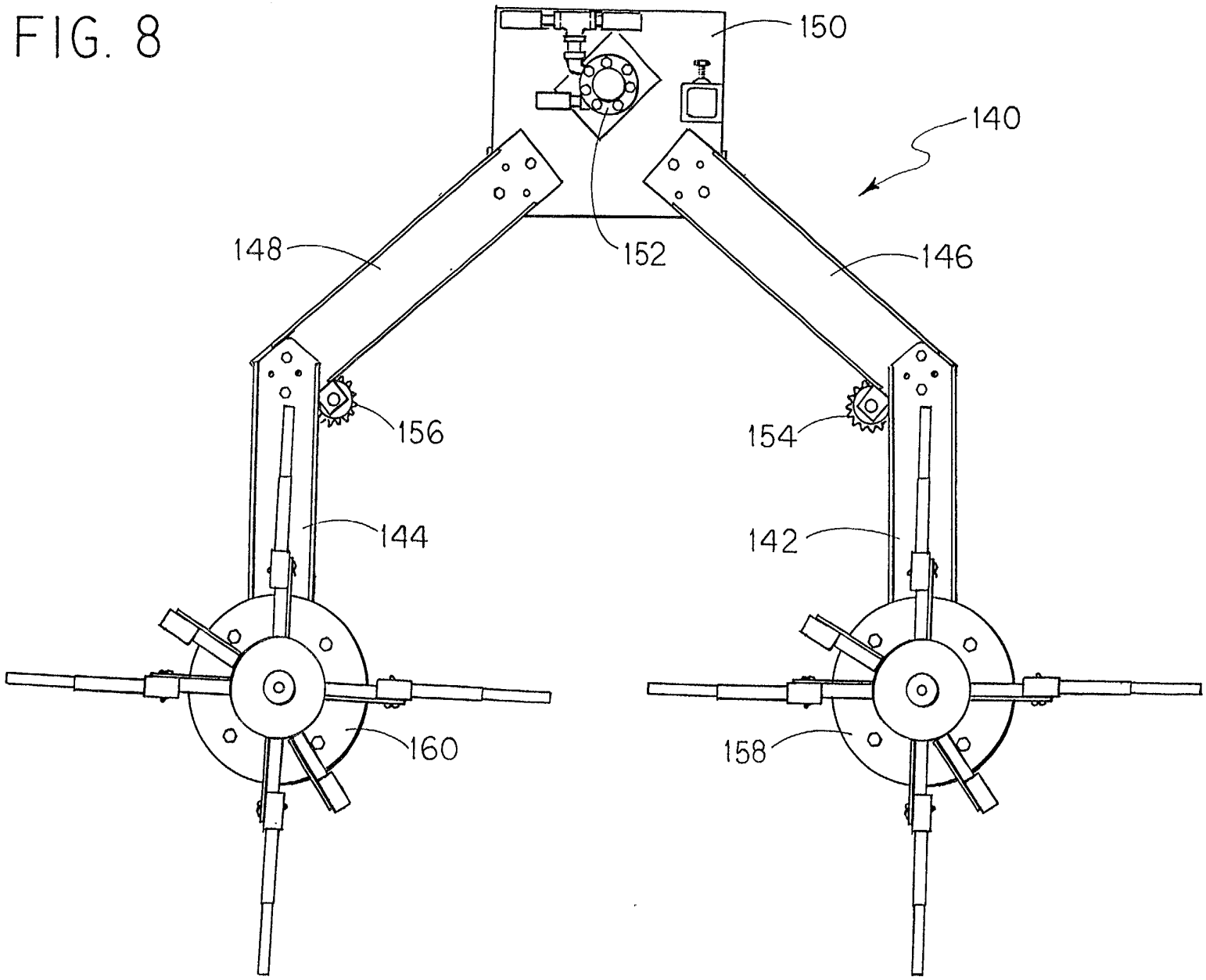


FIG. 7

FIG. 8



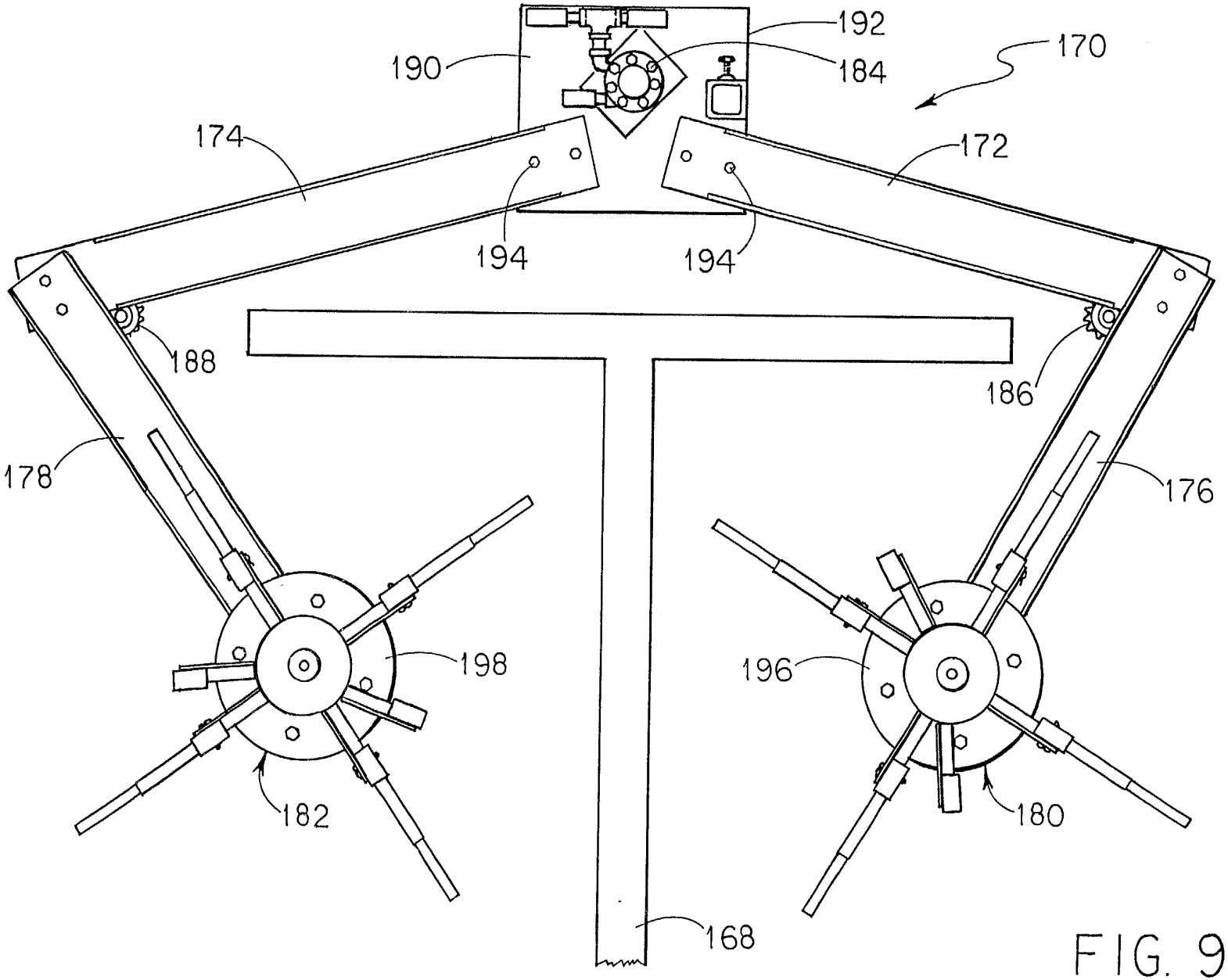

192
190
184
170
174
172
194
194
188
186
178
176
198
196
182
180
168

FIG. 9

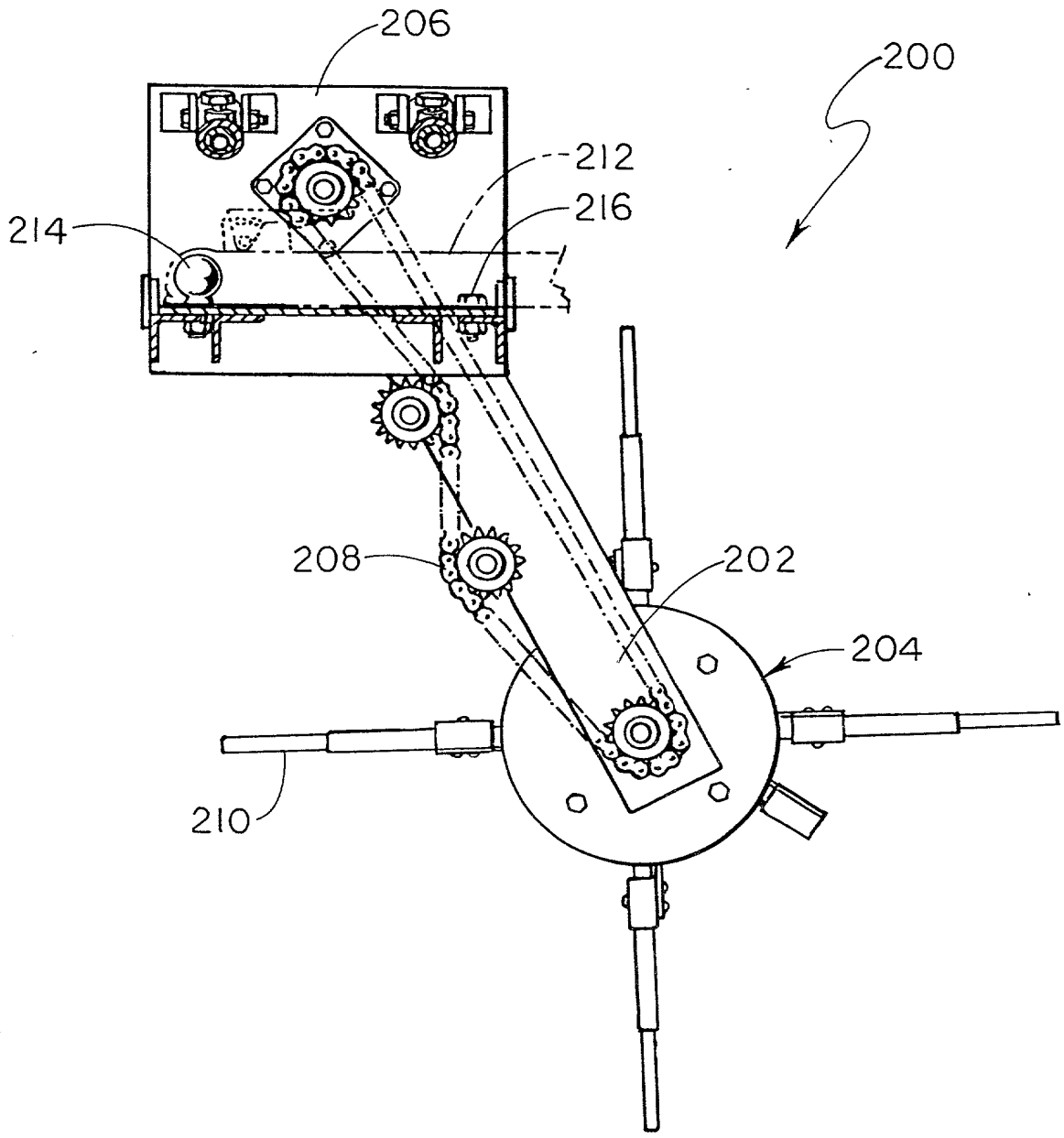


FIG. 10

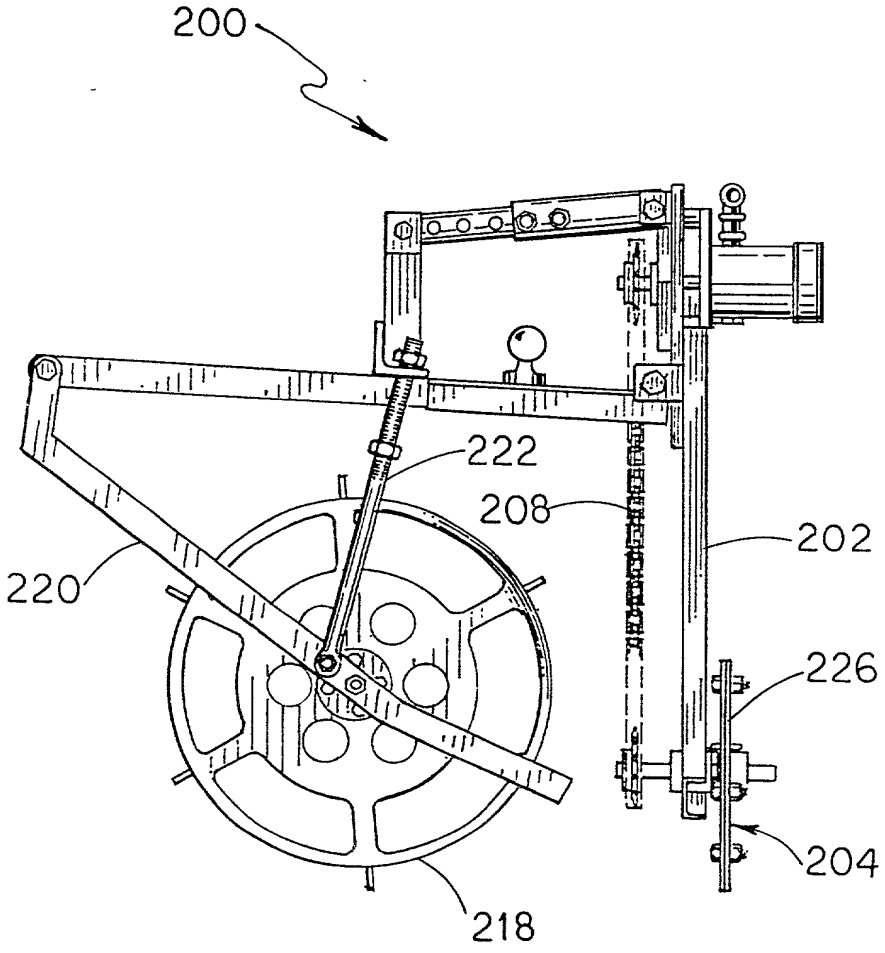


FIG. 11

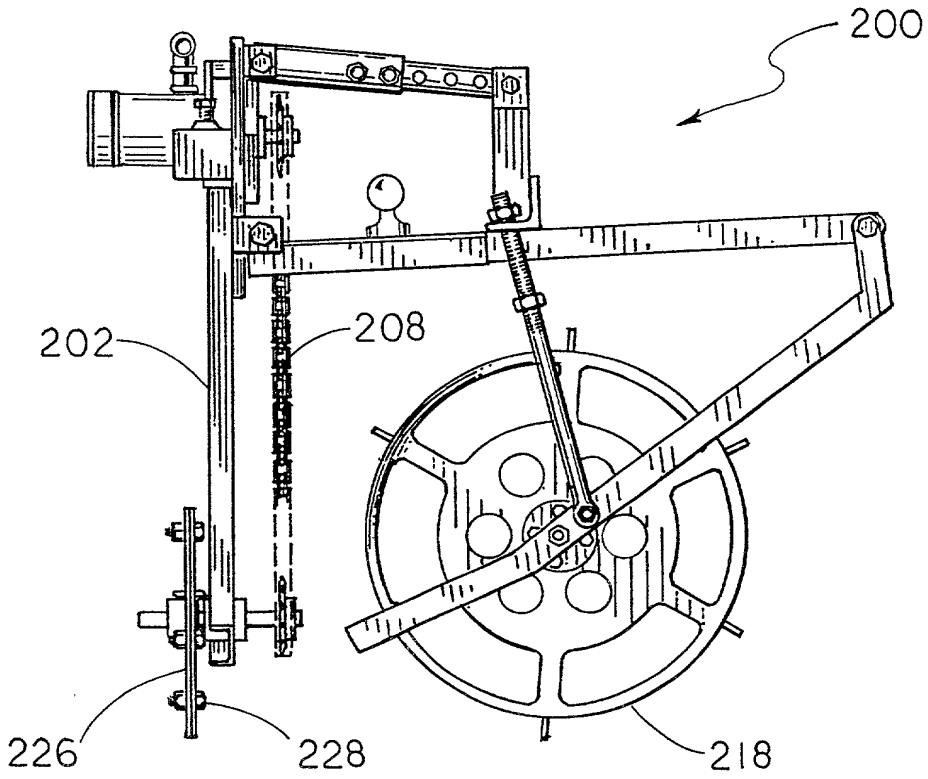


FIG. 12

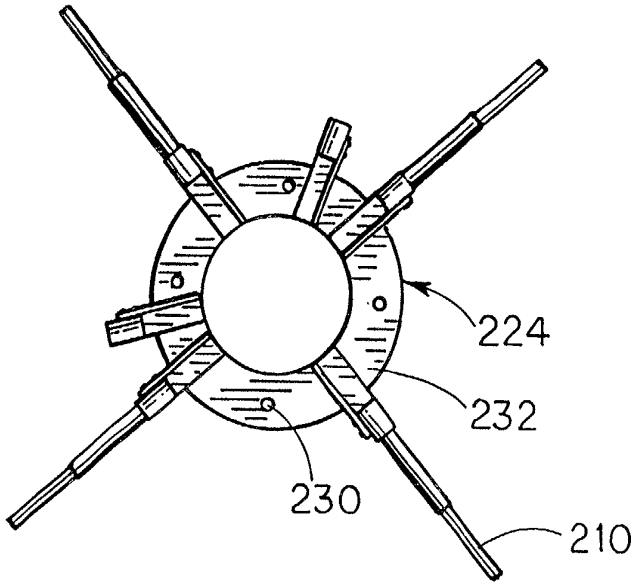


FIG. 13

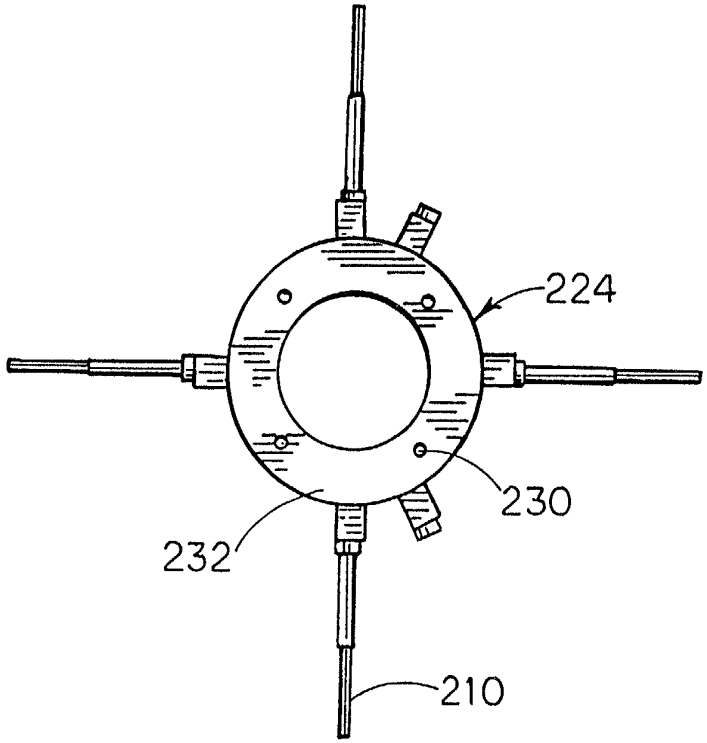


FIG. 14

FIG. 15

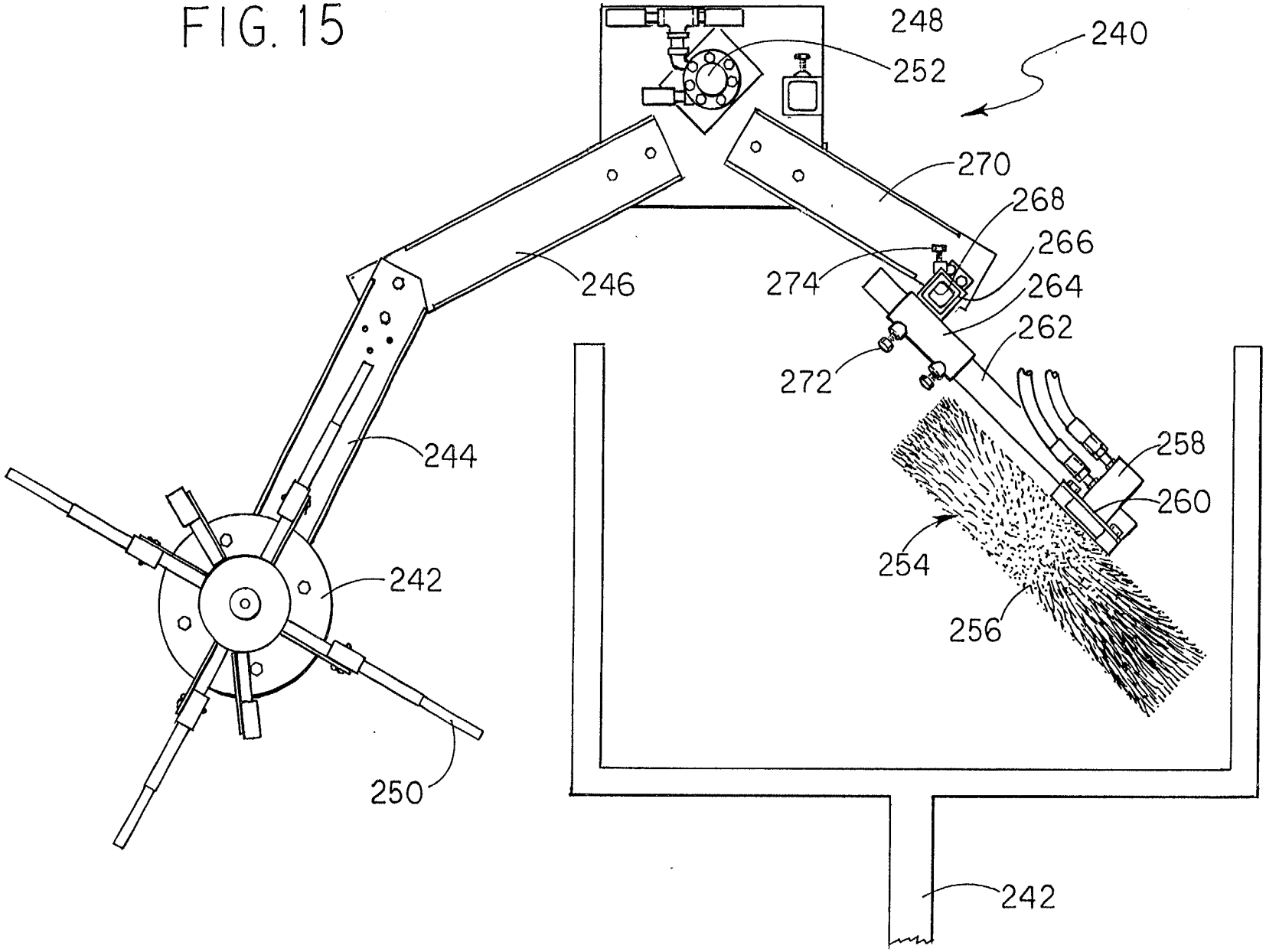
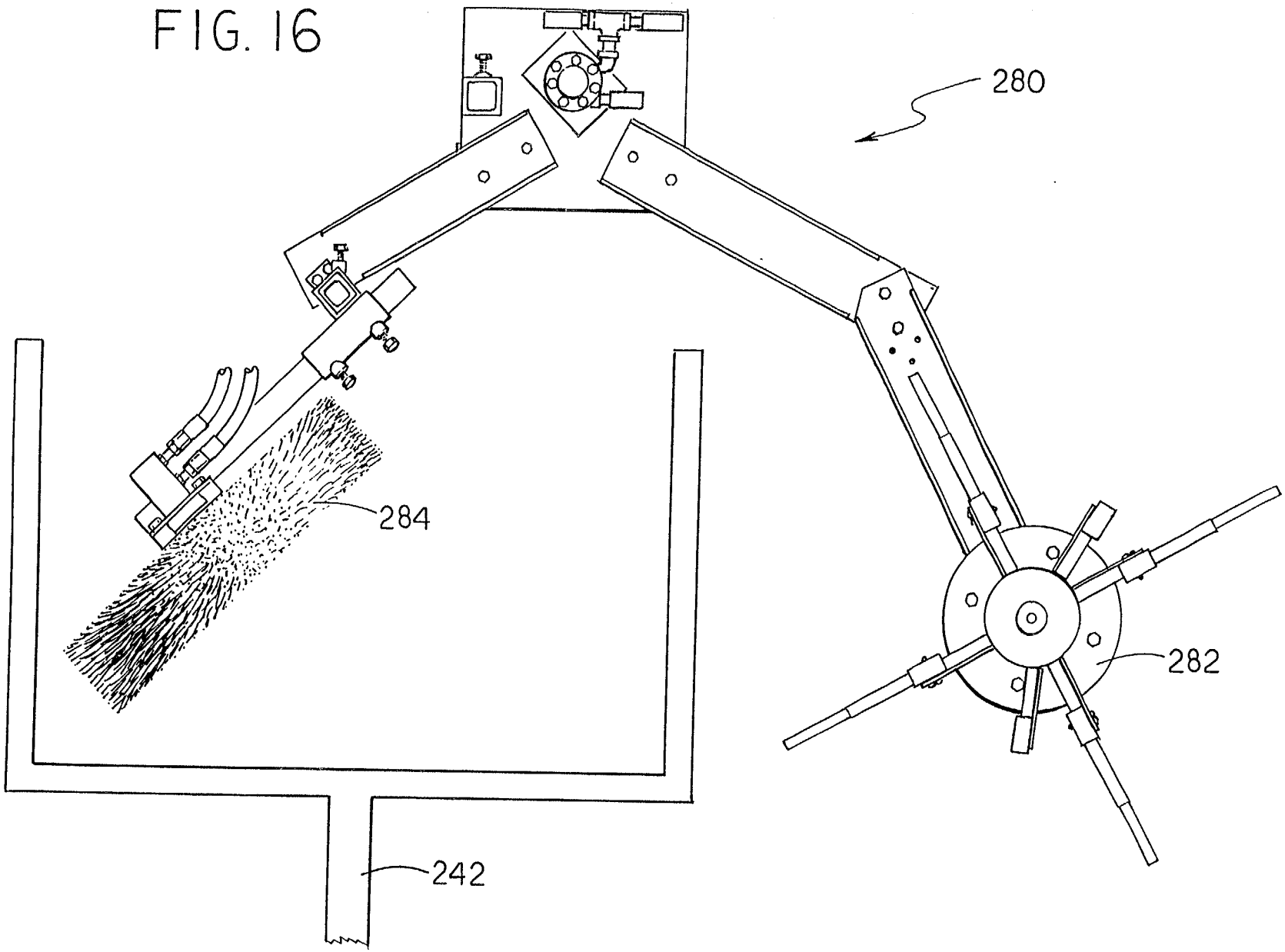


FIG. 16



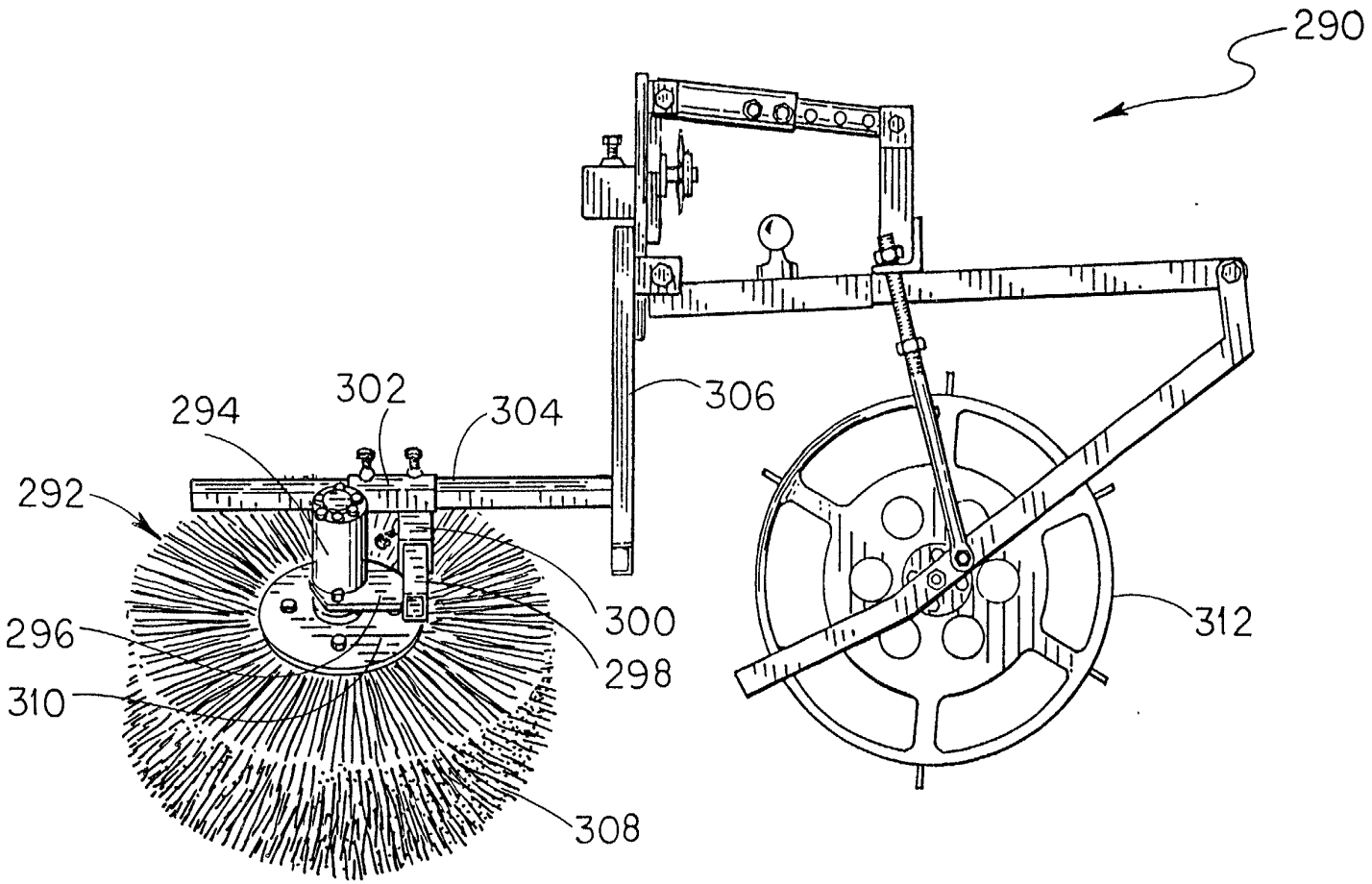


FIG. 17

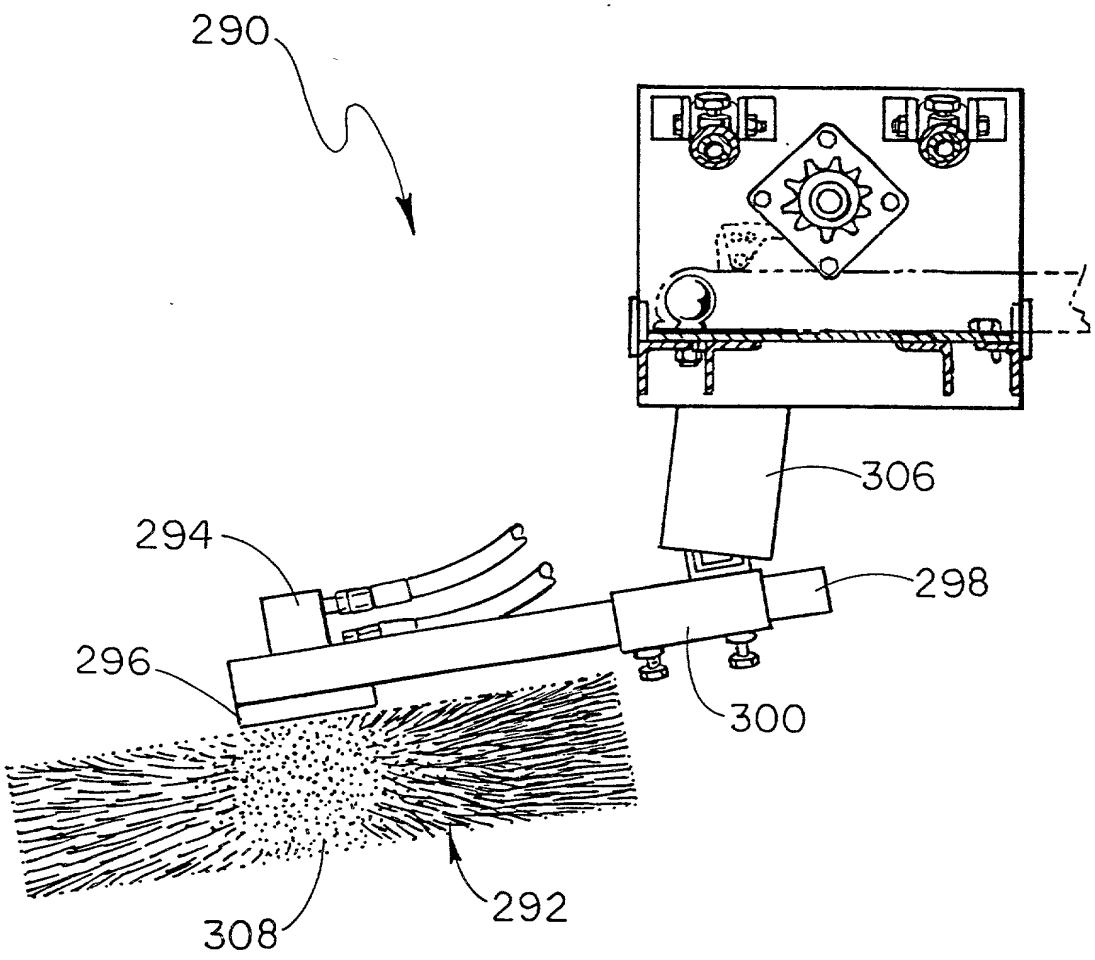


FIG. 18

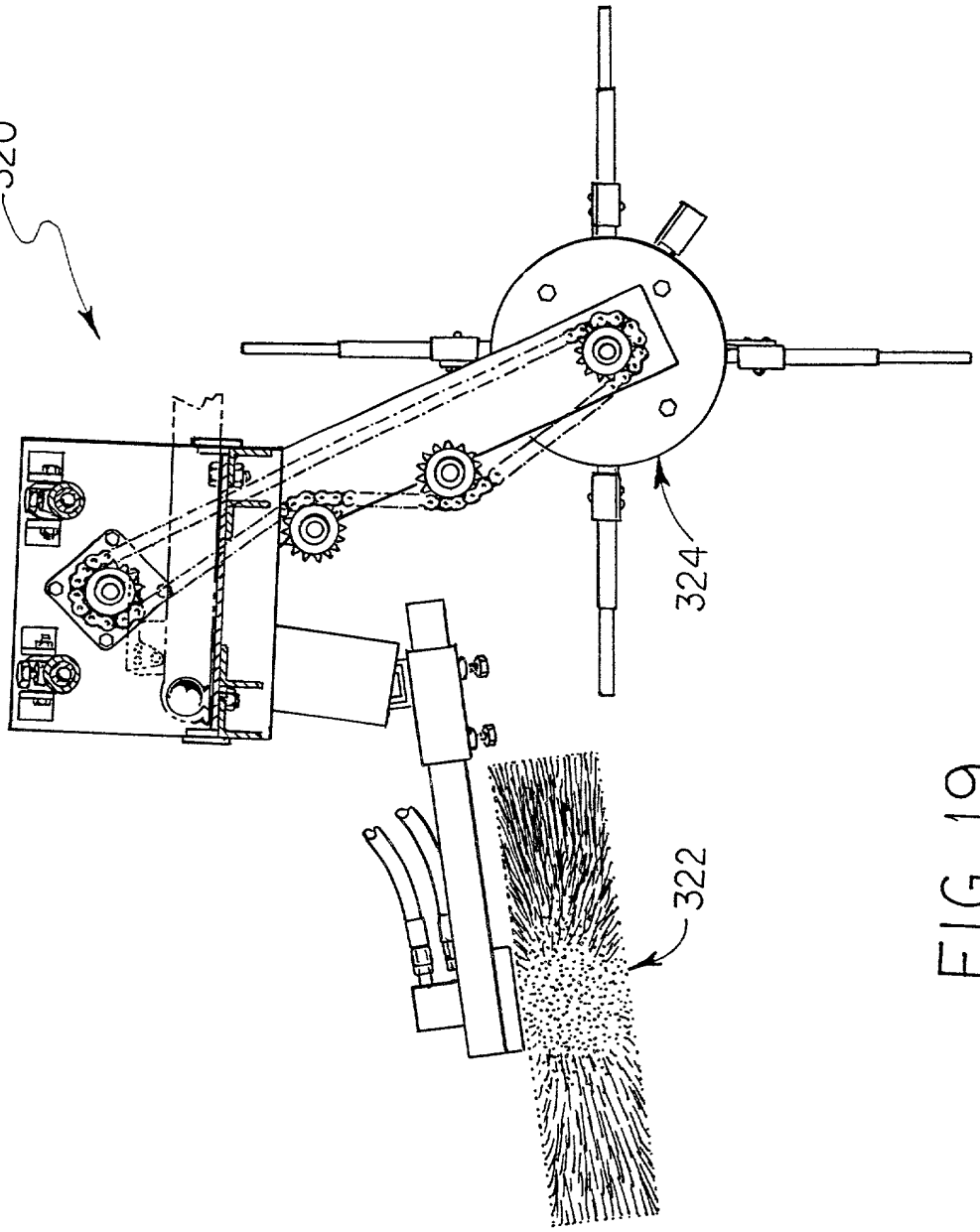


FIG. 19

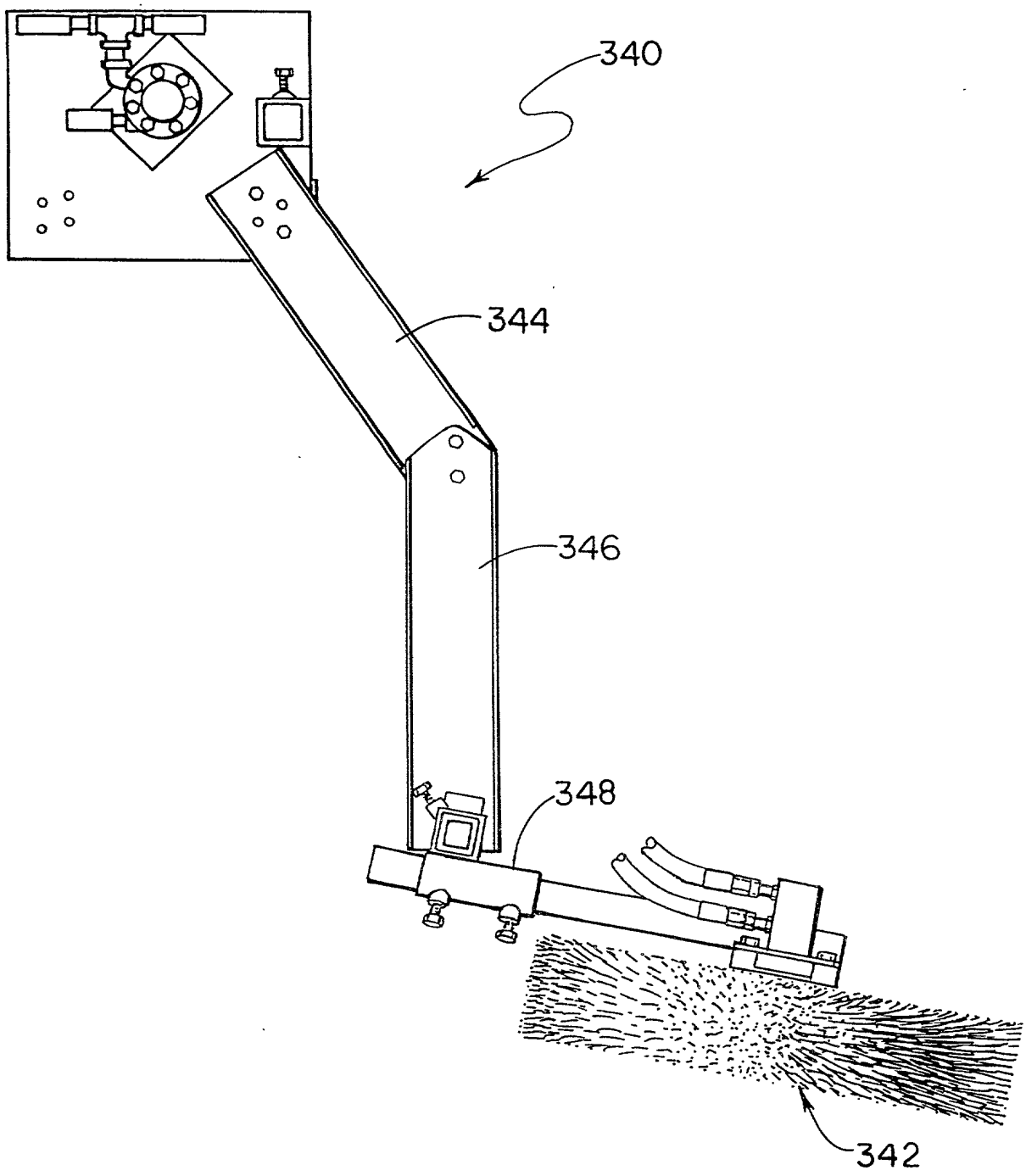


FIG. 20

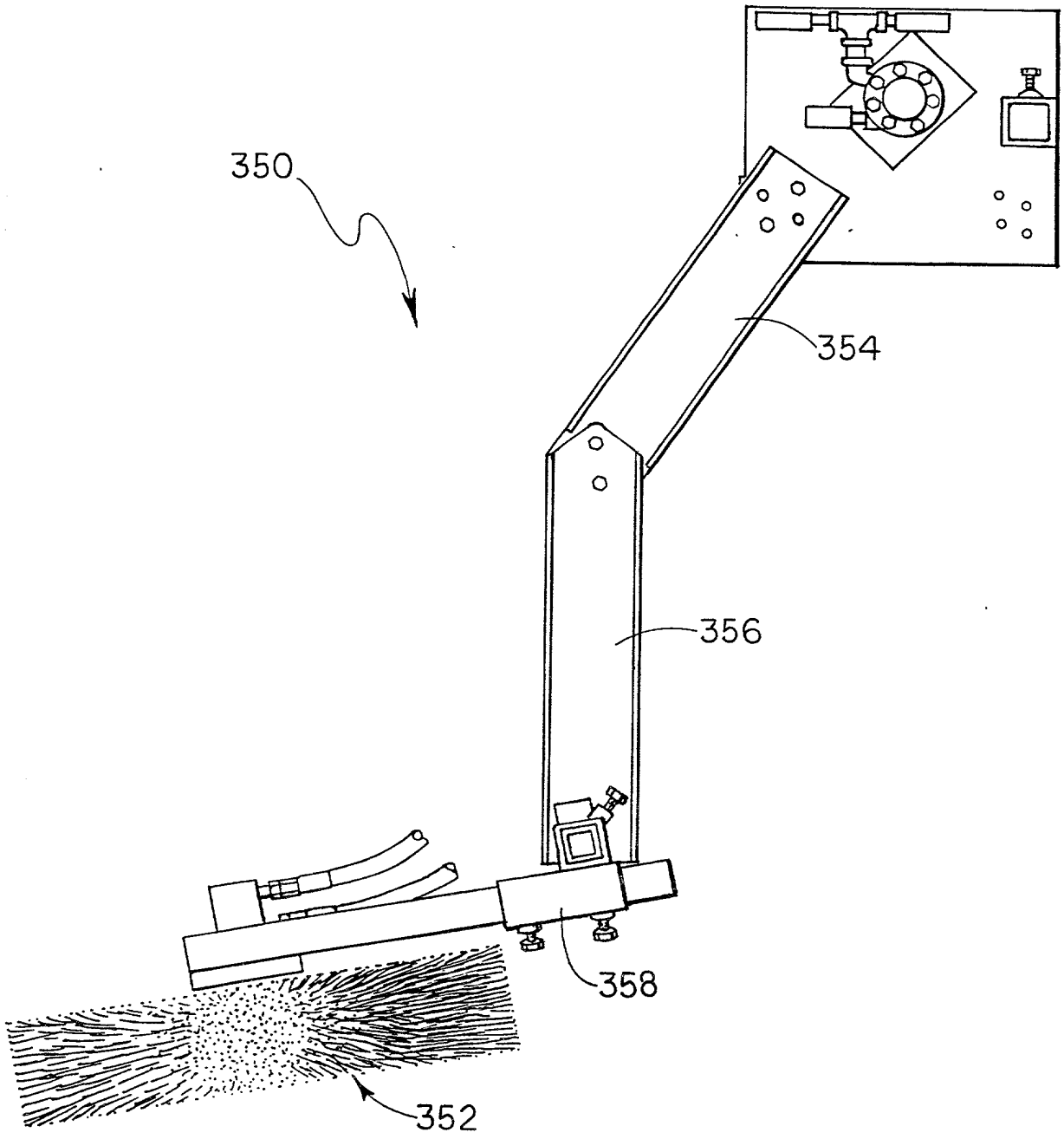


FIG. 21

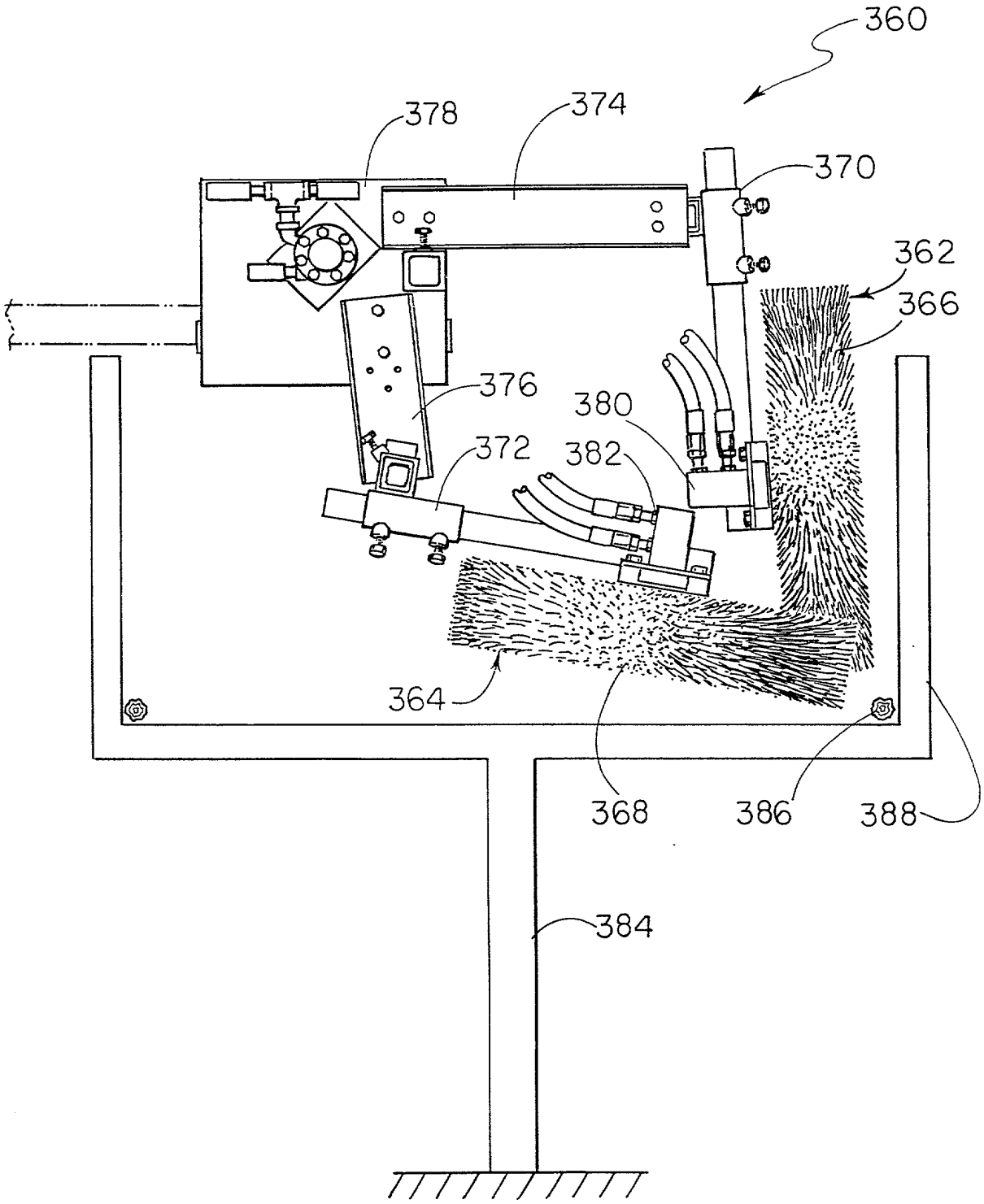


FIG. 22

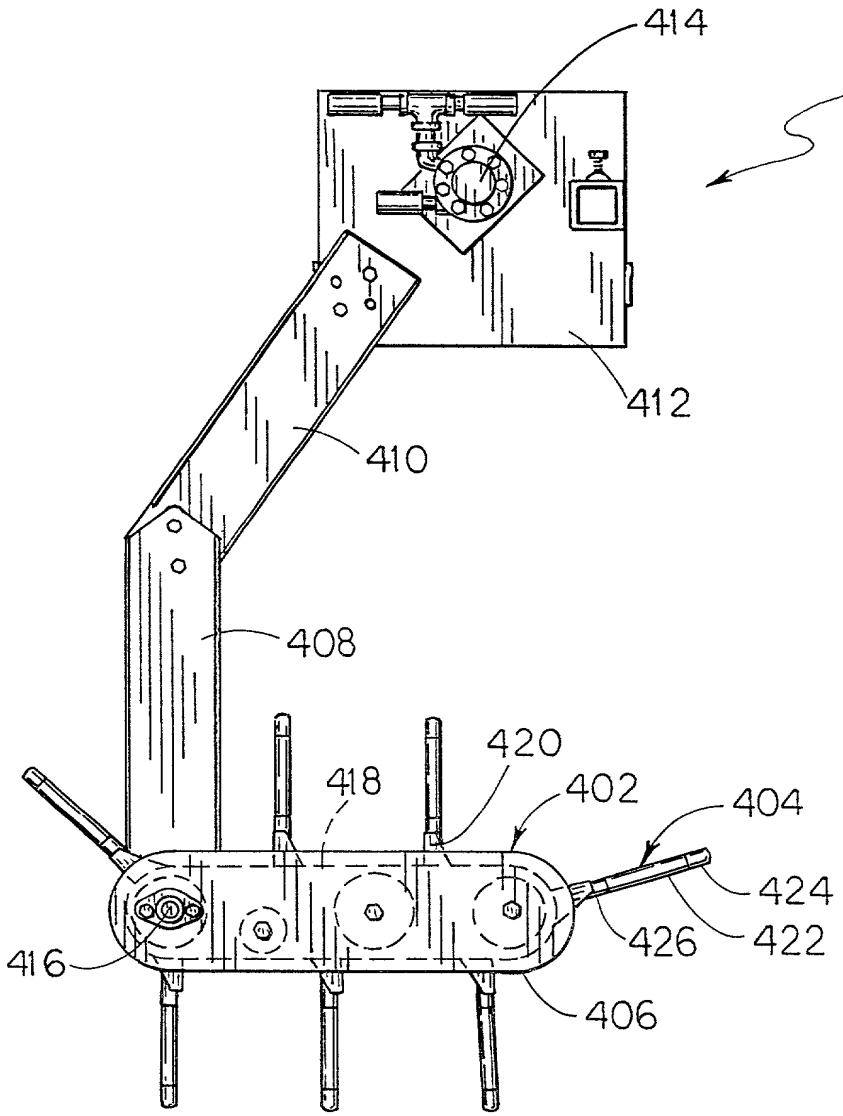


FIG. 23

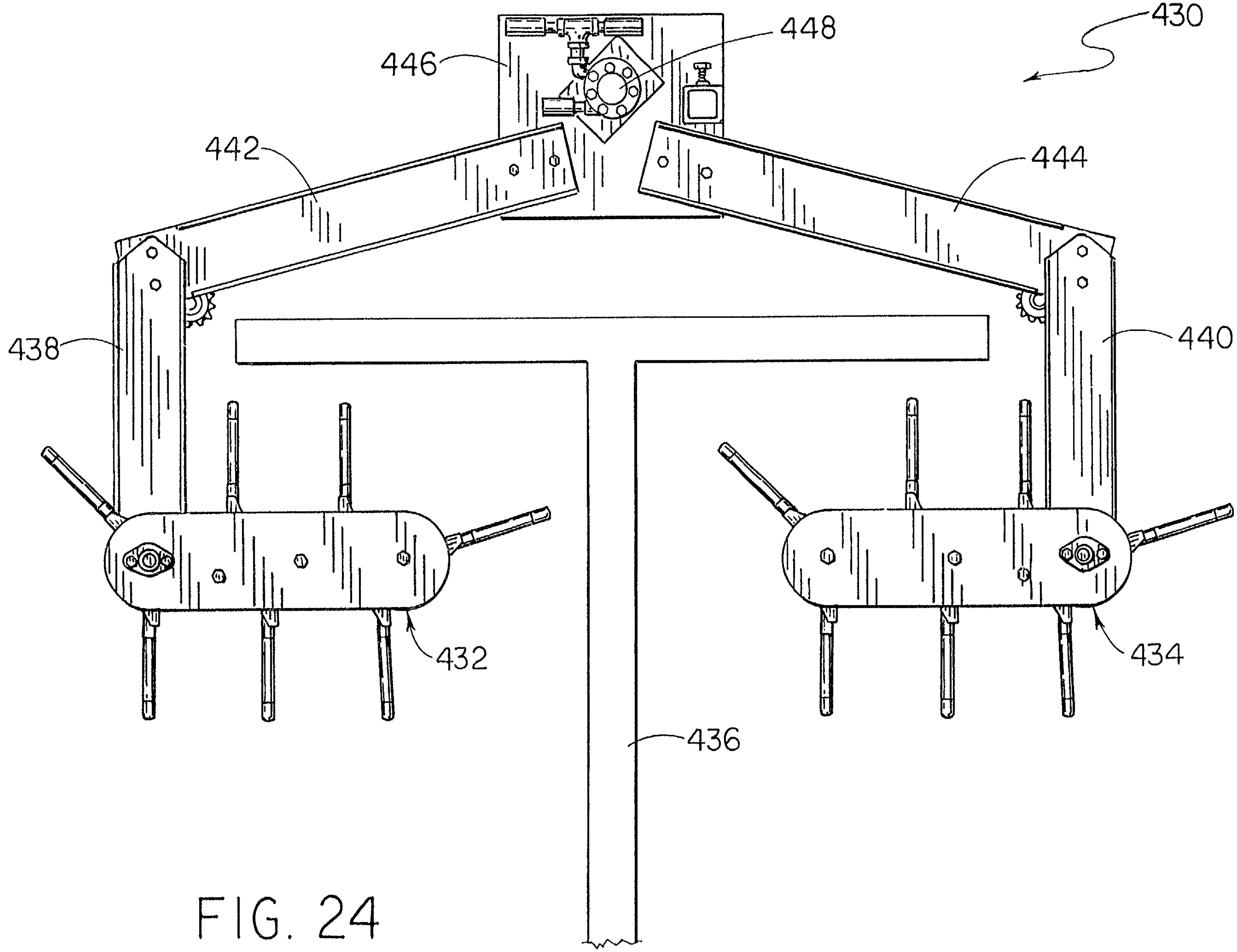


FIG. 24

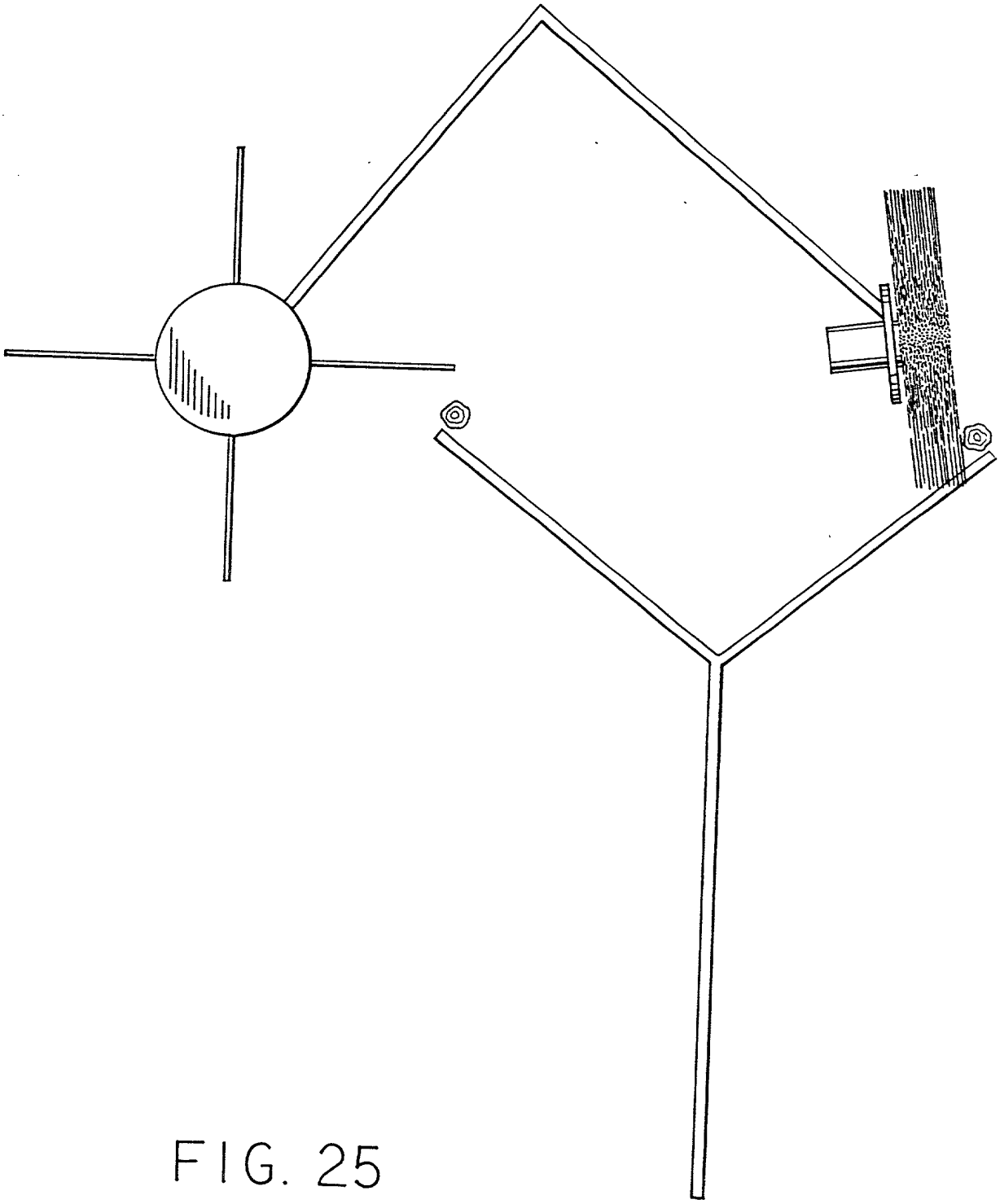


FIG. 25

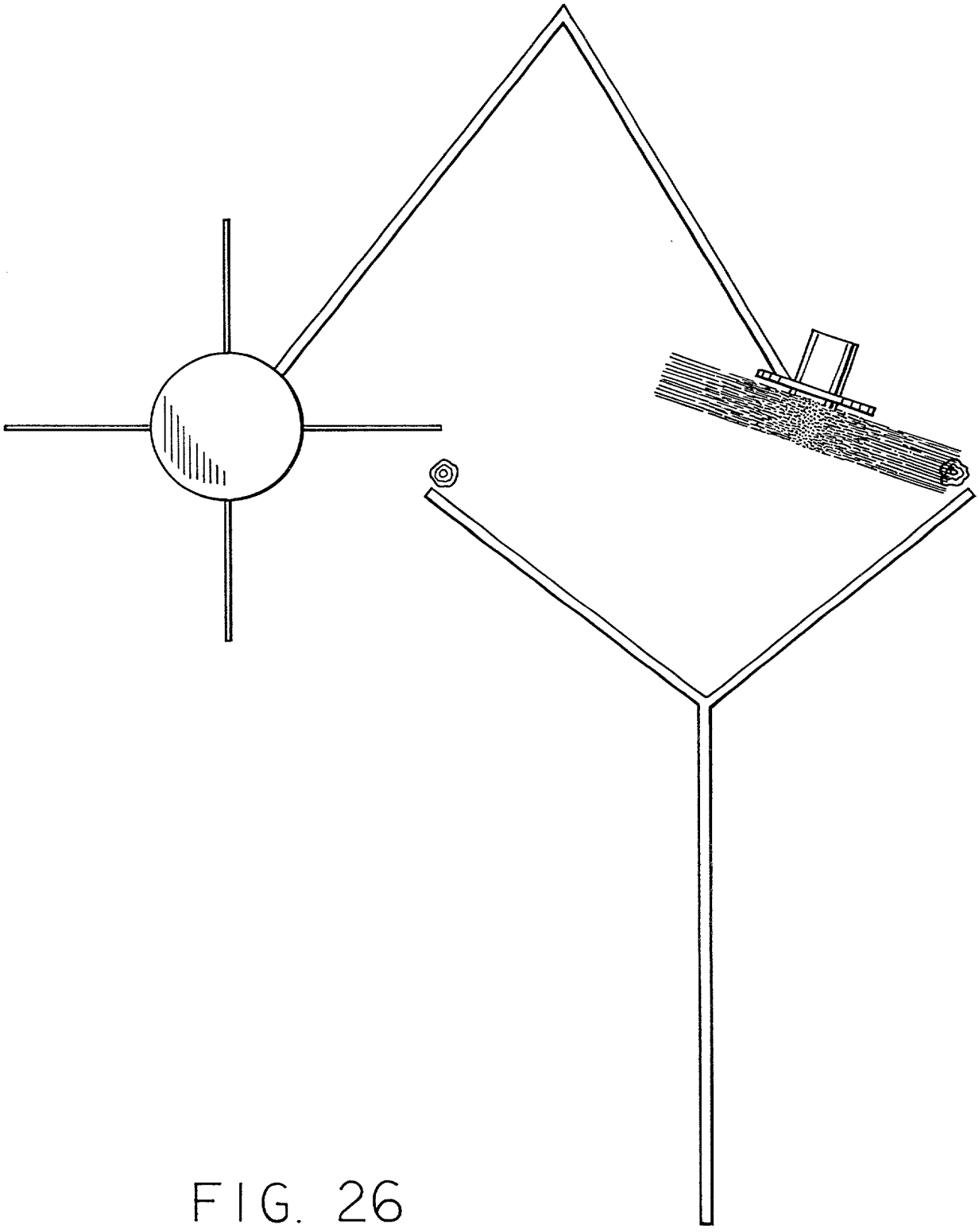


FIG. 26

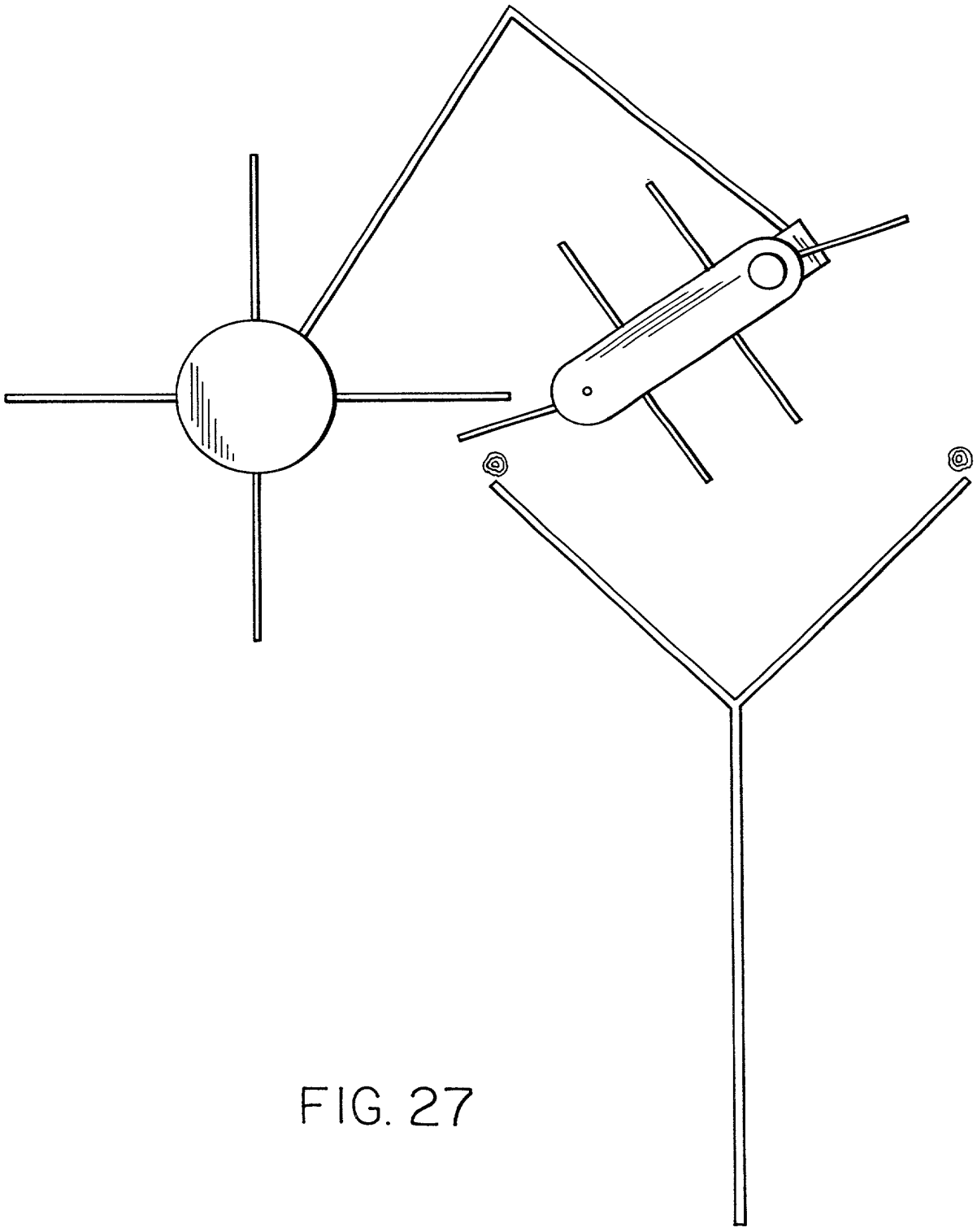


FIG. 27

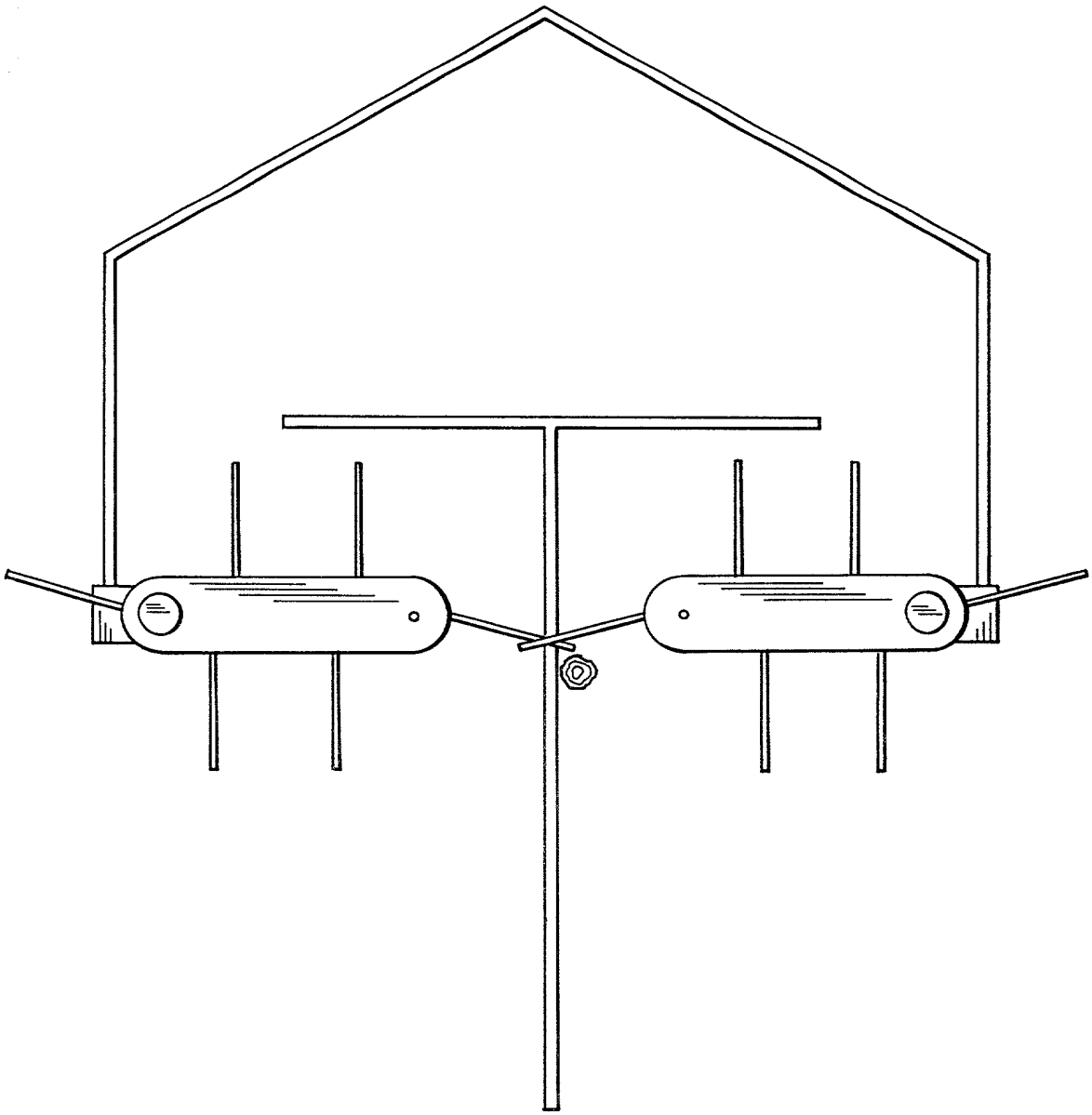


FIG. 28

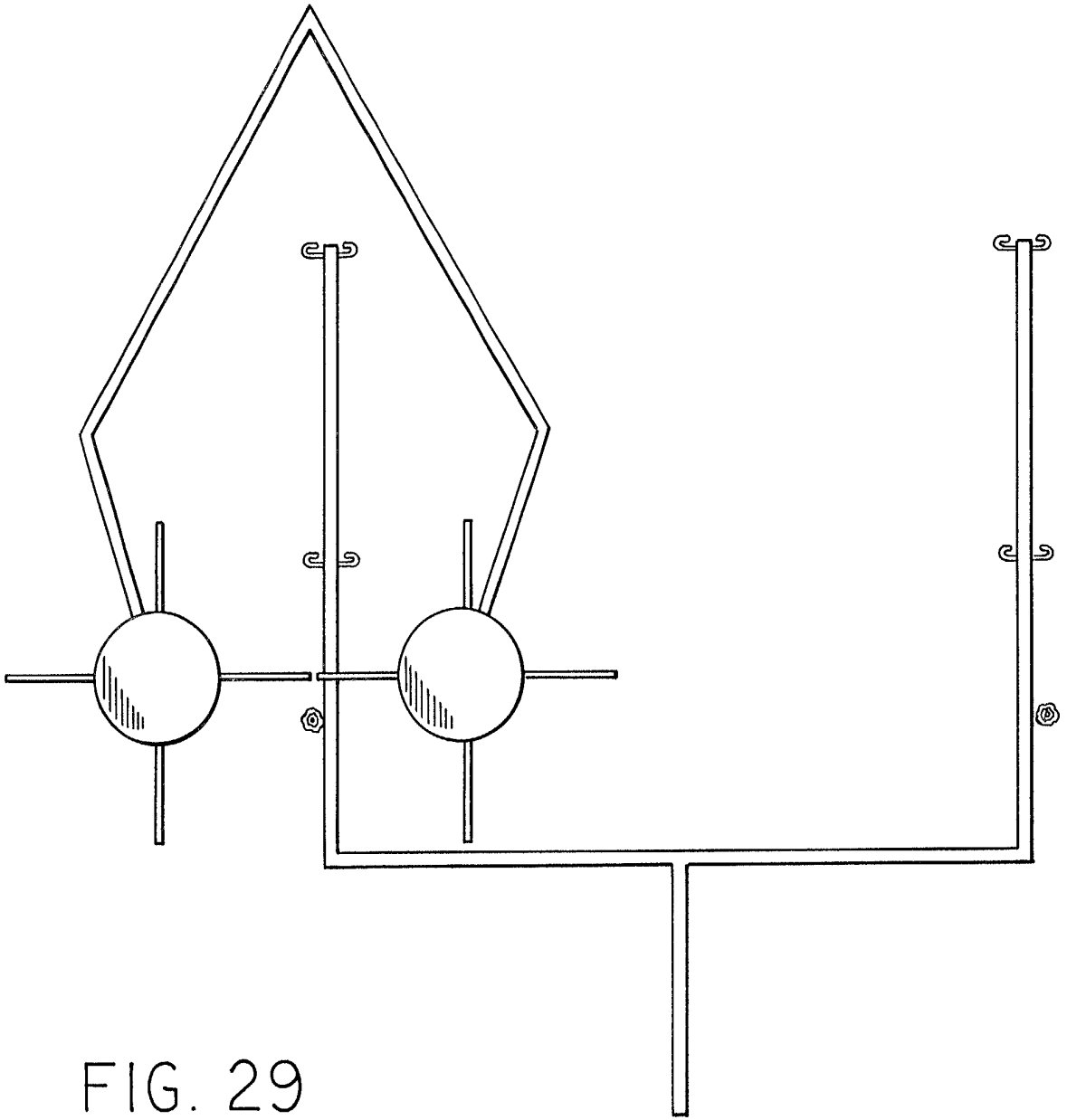


FIG. 29

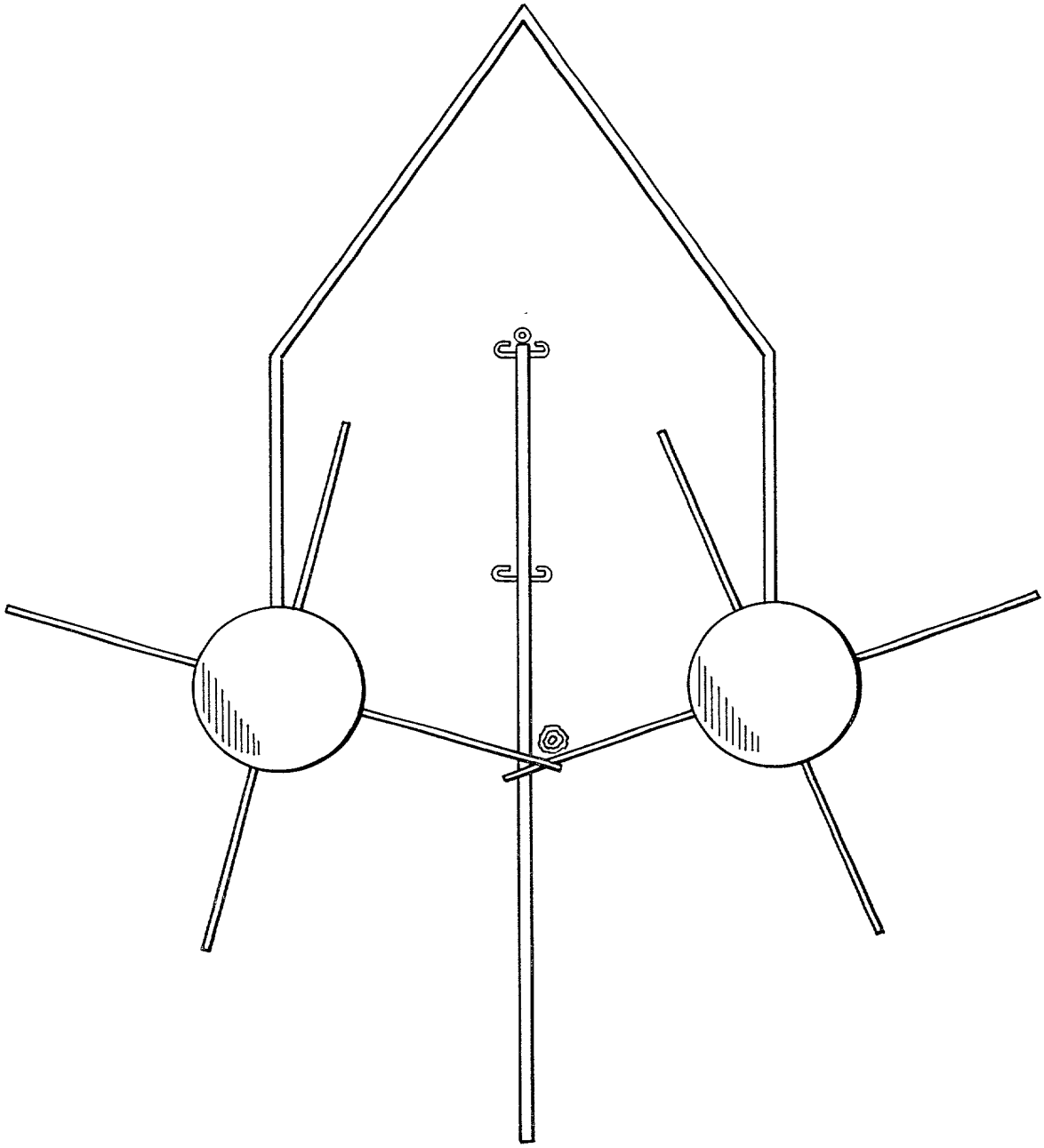


FIG. 30

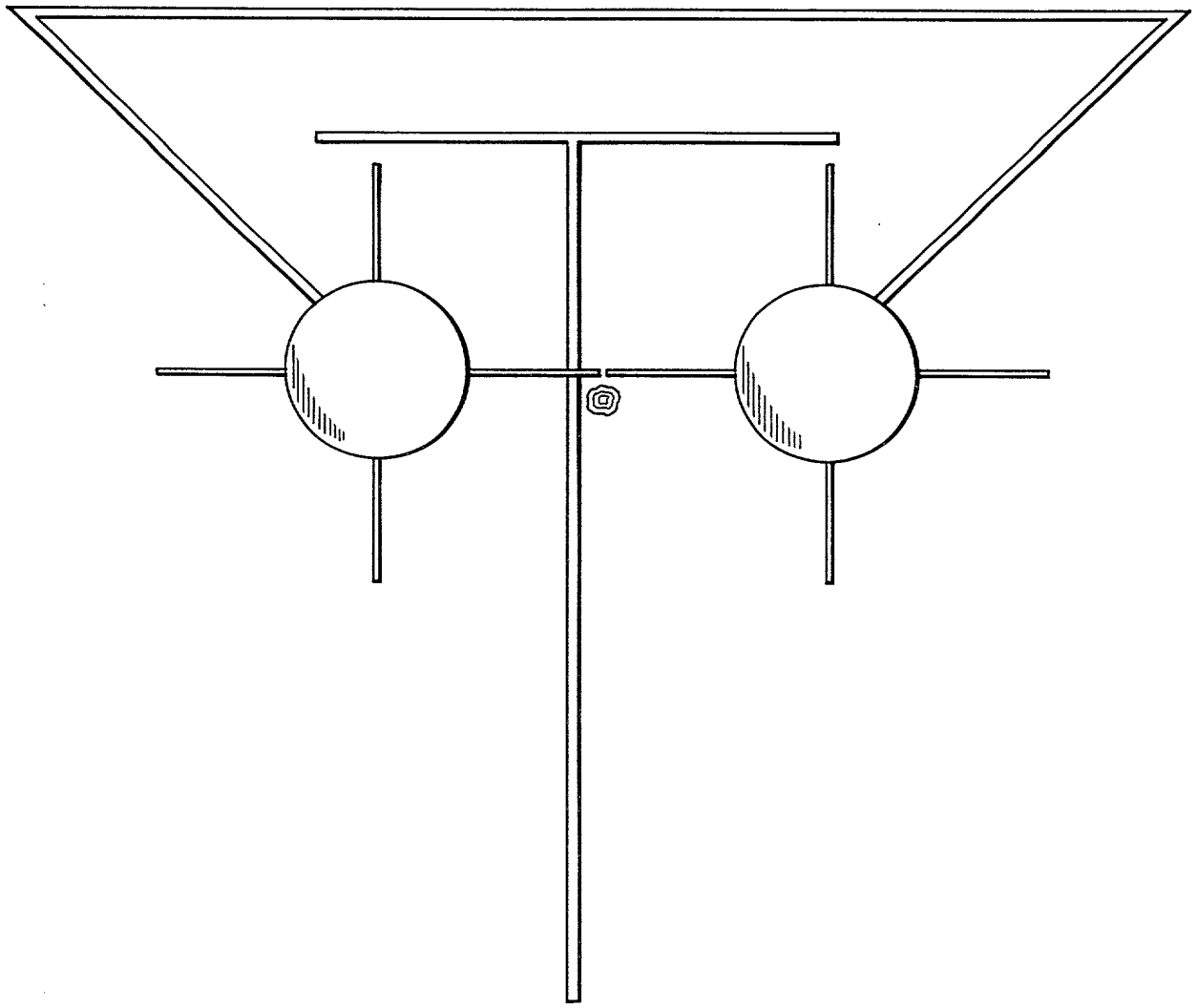


FIG. 31

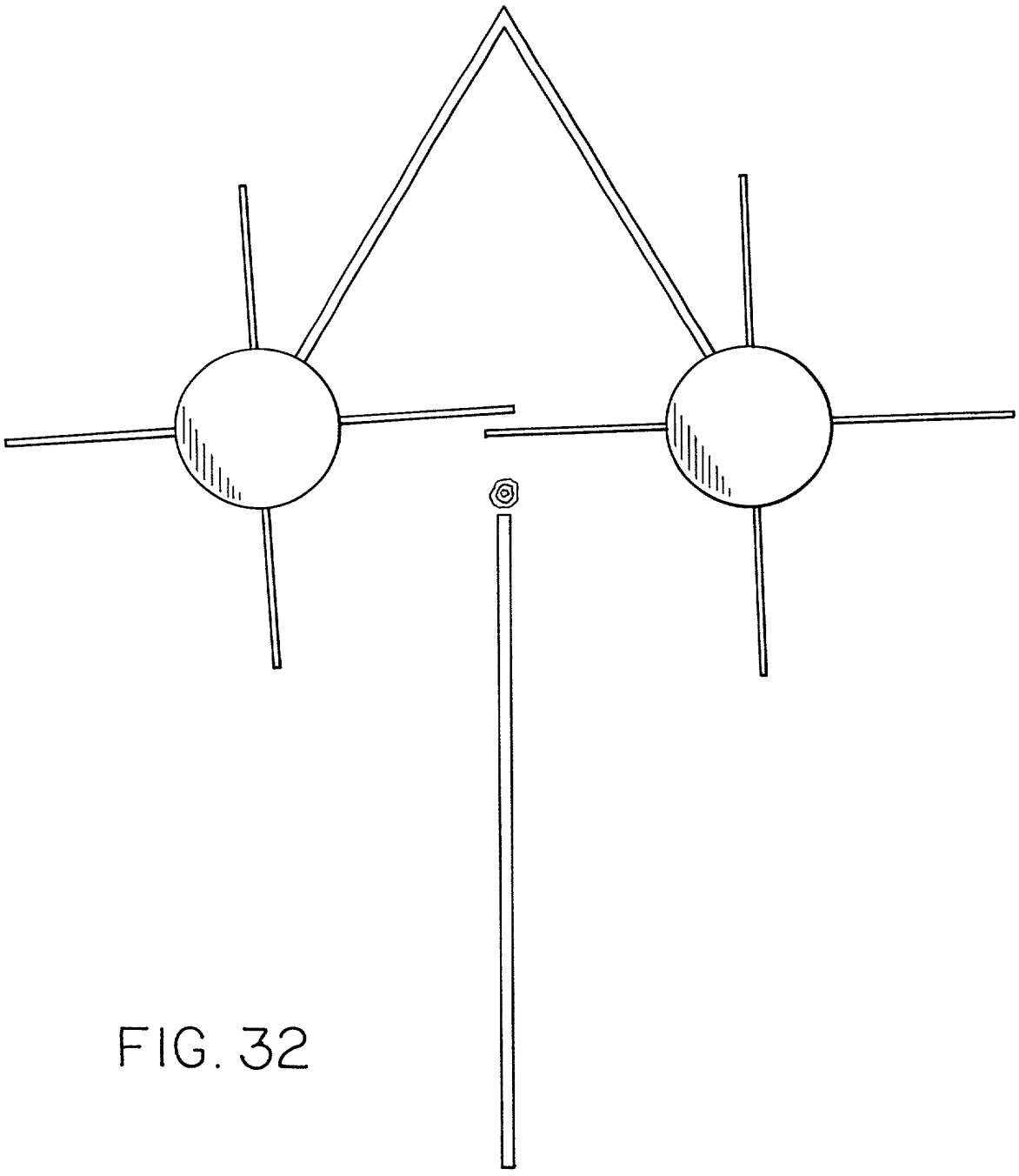


FIG. 32

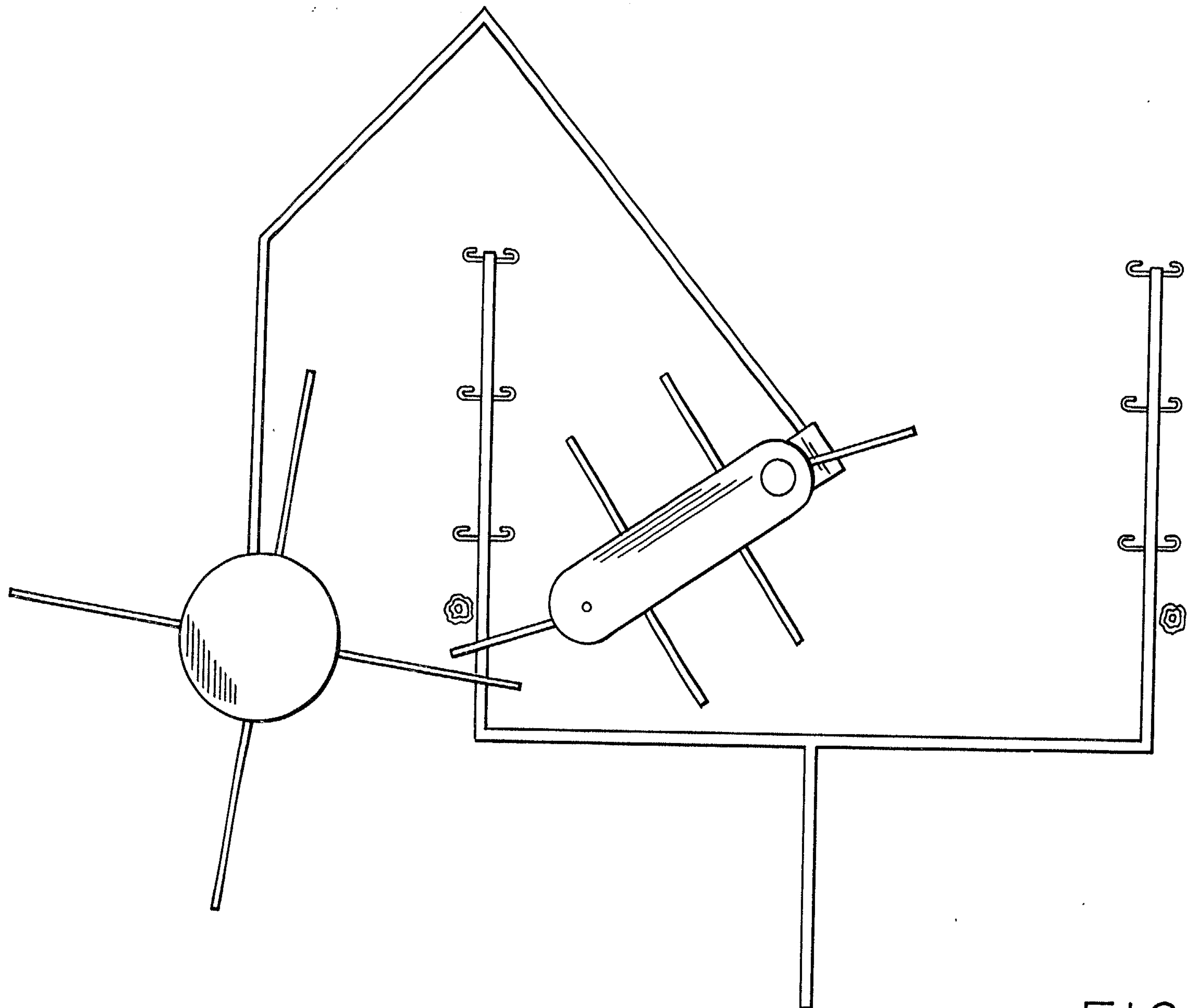


FIG. 33

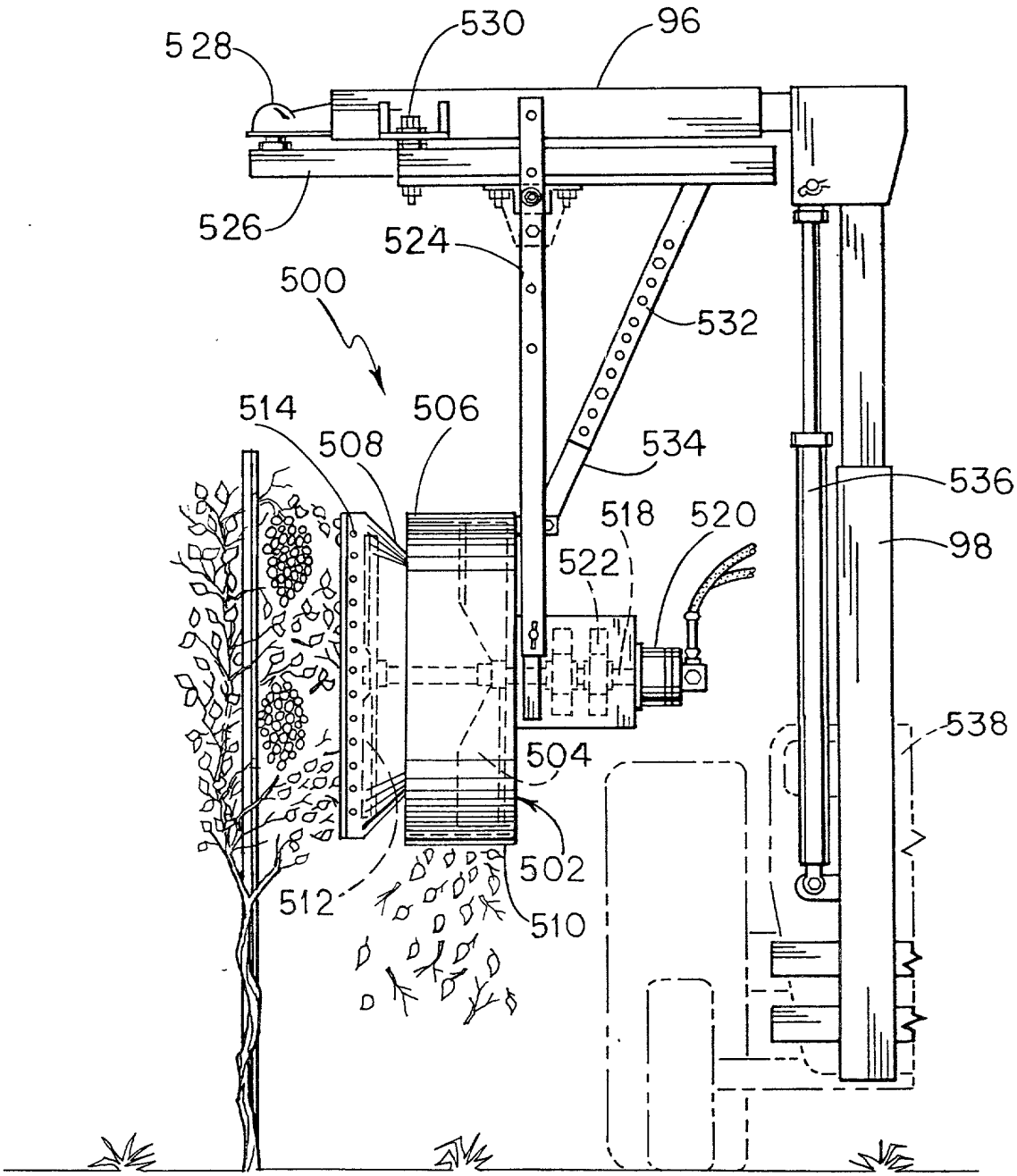

528
530
96
526
524
500
532
514
506
508
534
536
518
520
522
98
538
504
502
512
510

FIG. 34

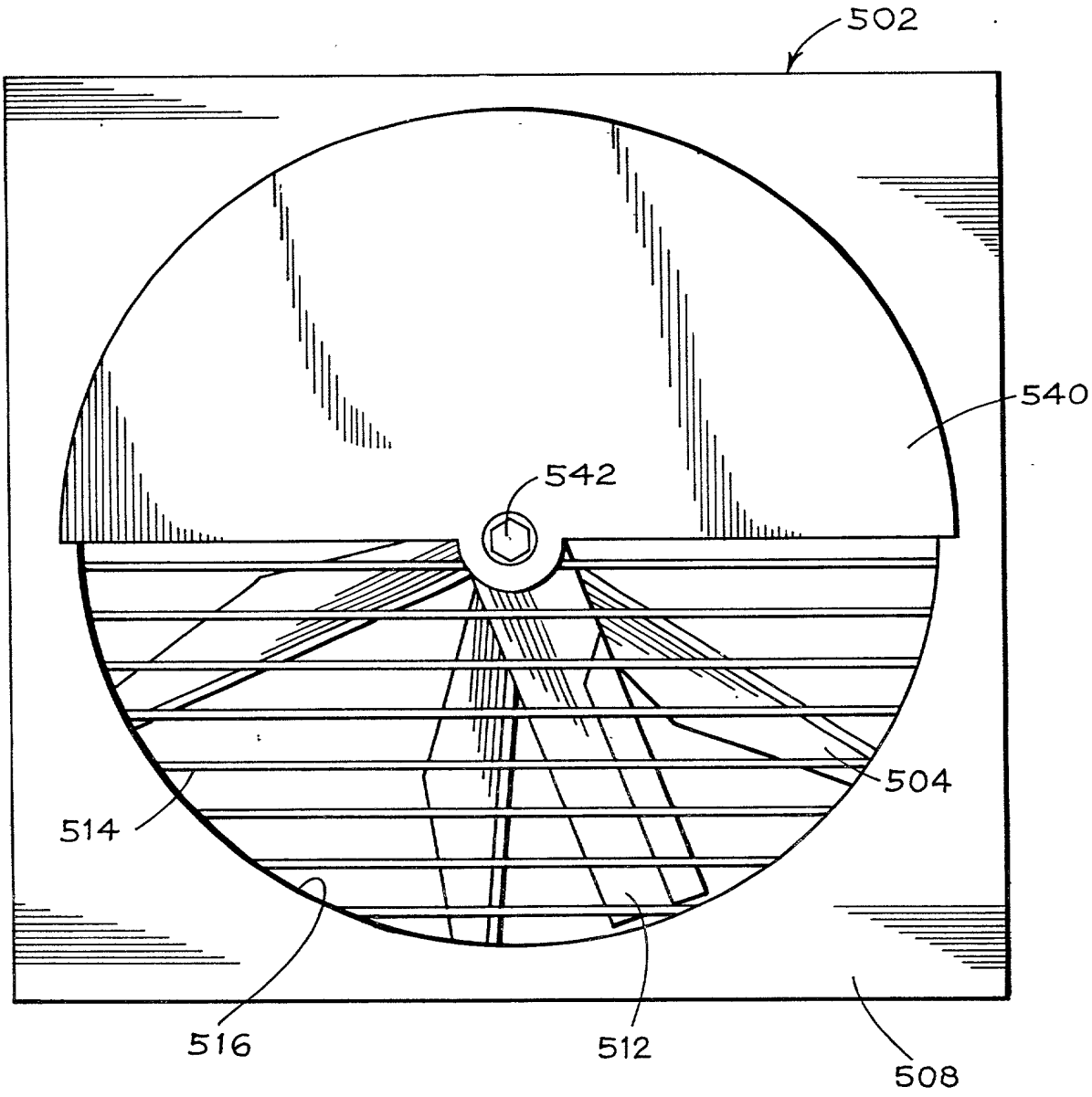


FIG. 35

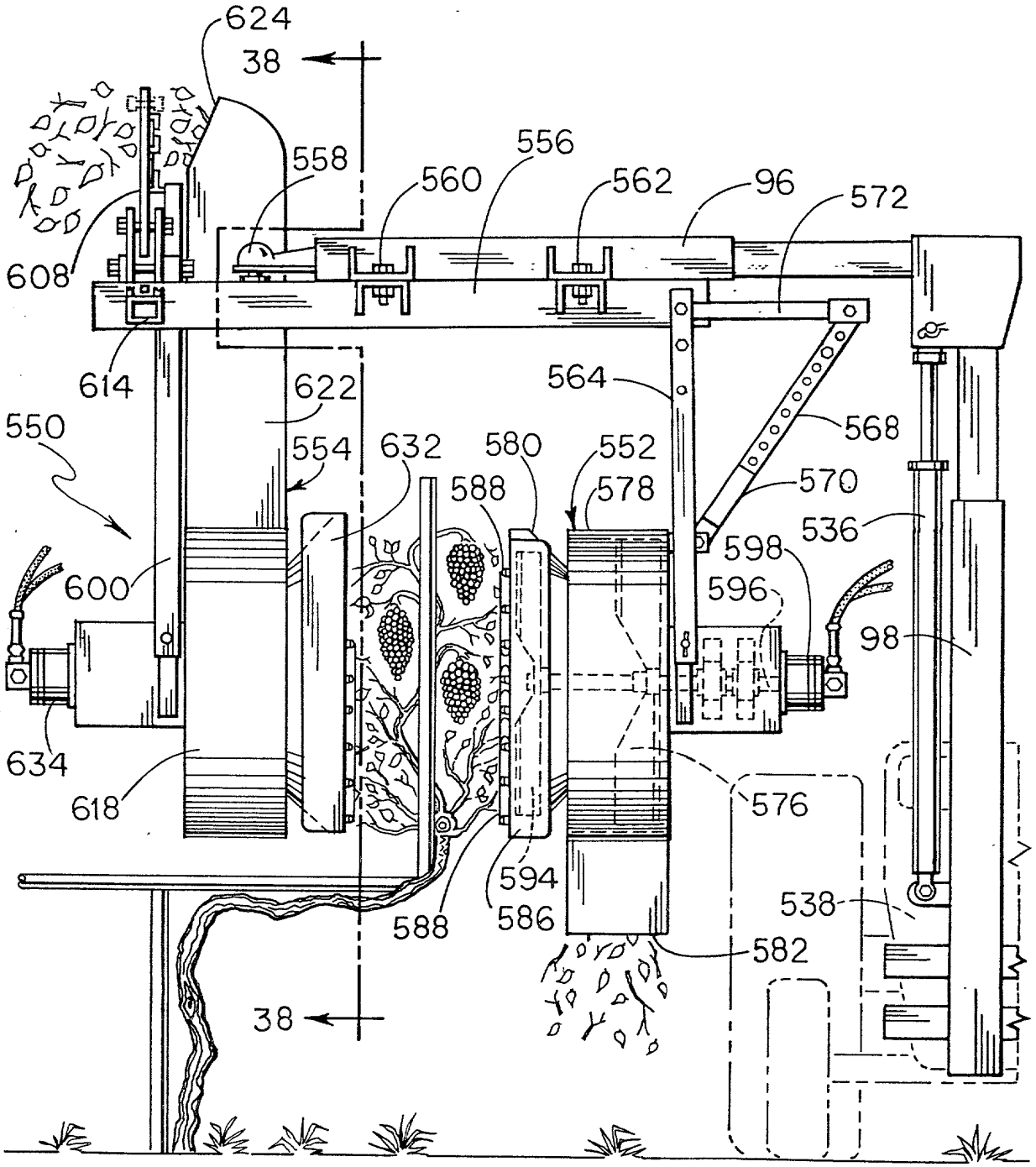

624
38
558
556
560
562
96
572
608
614
622
564
568
550
554
632
580
552
588
578
570
536
598
600
596
98
634
618
576
594
538
588
586
582
38

FIG. 36

FIG. 37

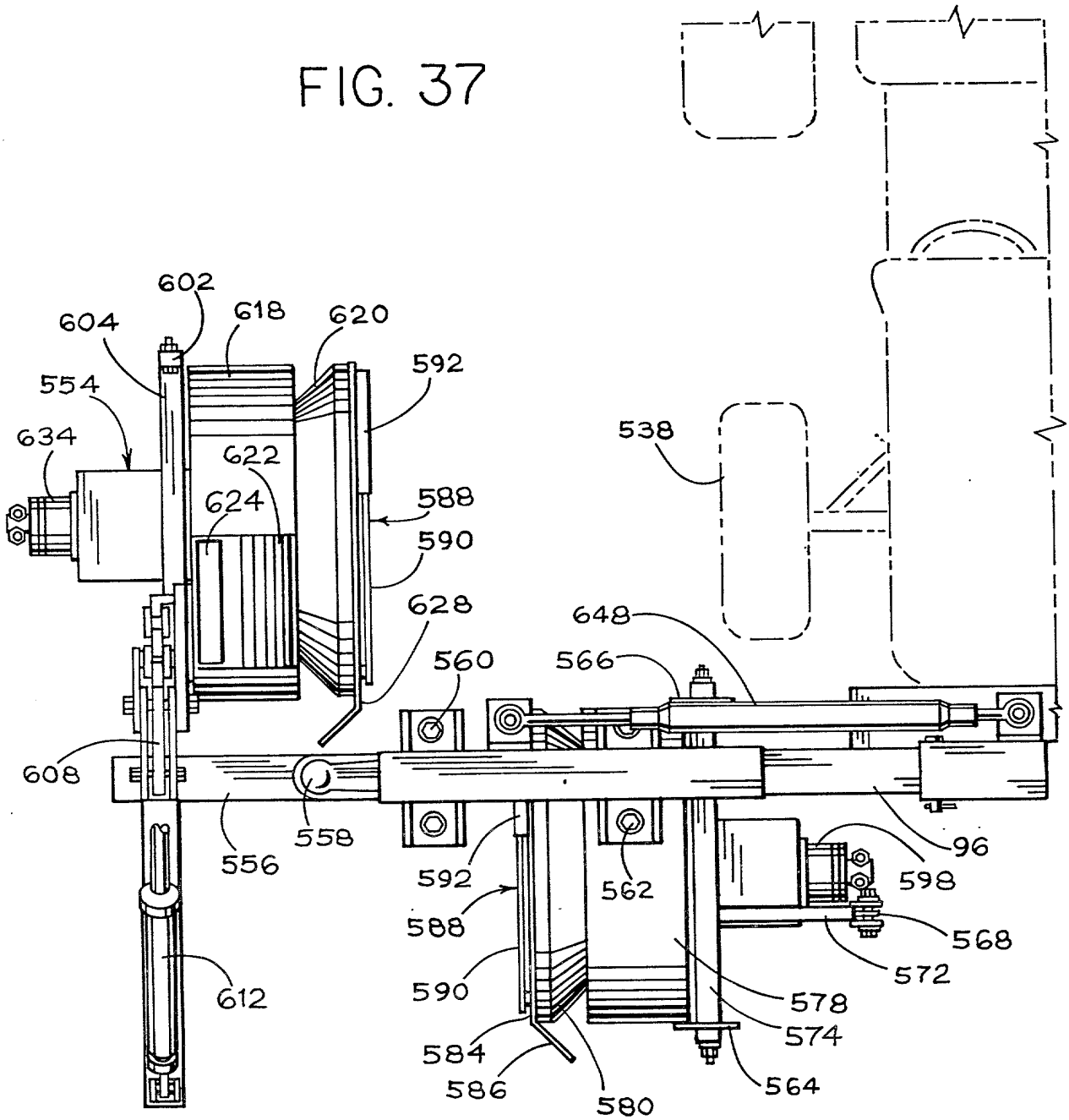
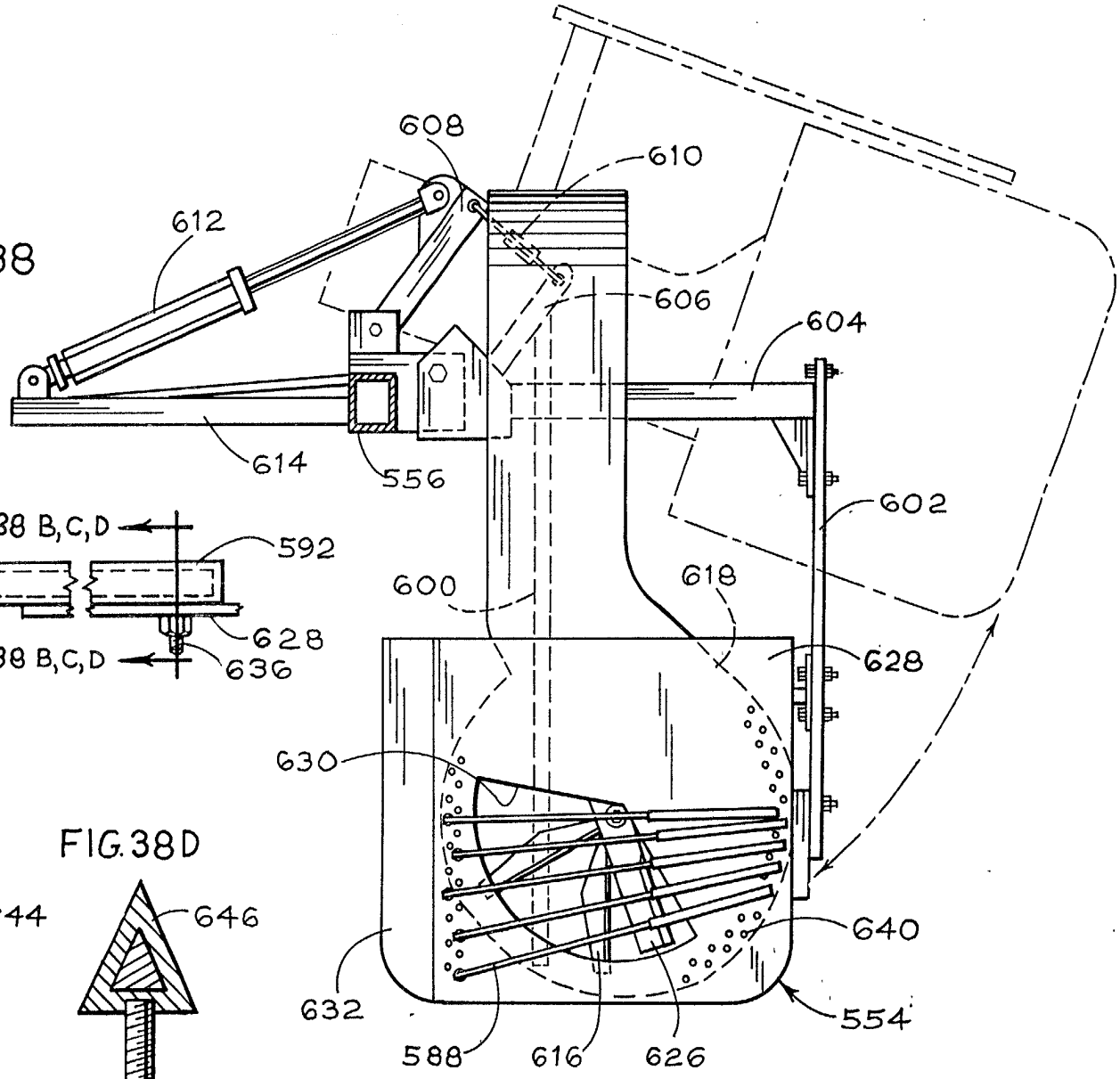

602
604
618
620
592
554
634
622
624
588
590
628
560
608
556
558
592
588
590
612
584
586
580
538
648
566
562
96
598
568
572
578
574
564

FIG. 38



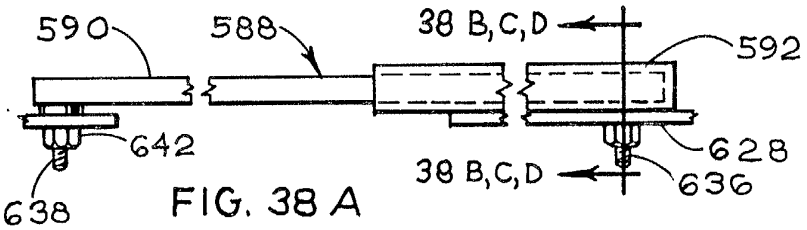


FIG. 38 A

FIG. 38B

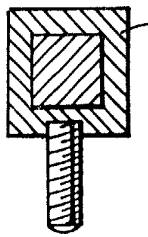


FIG. 38C

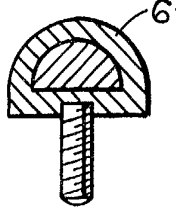
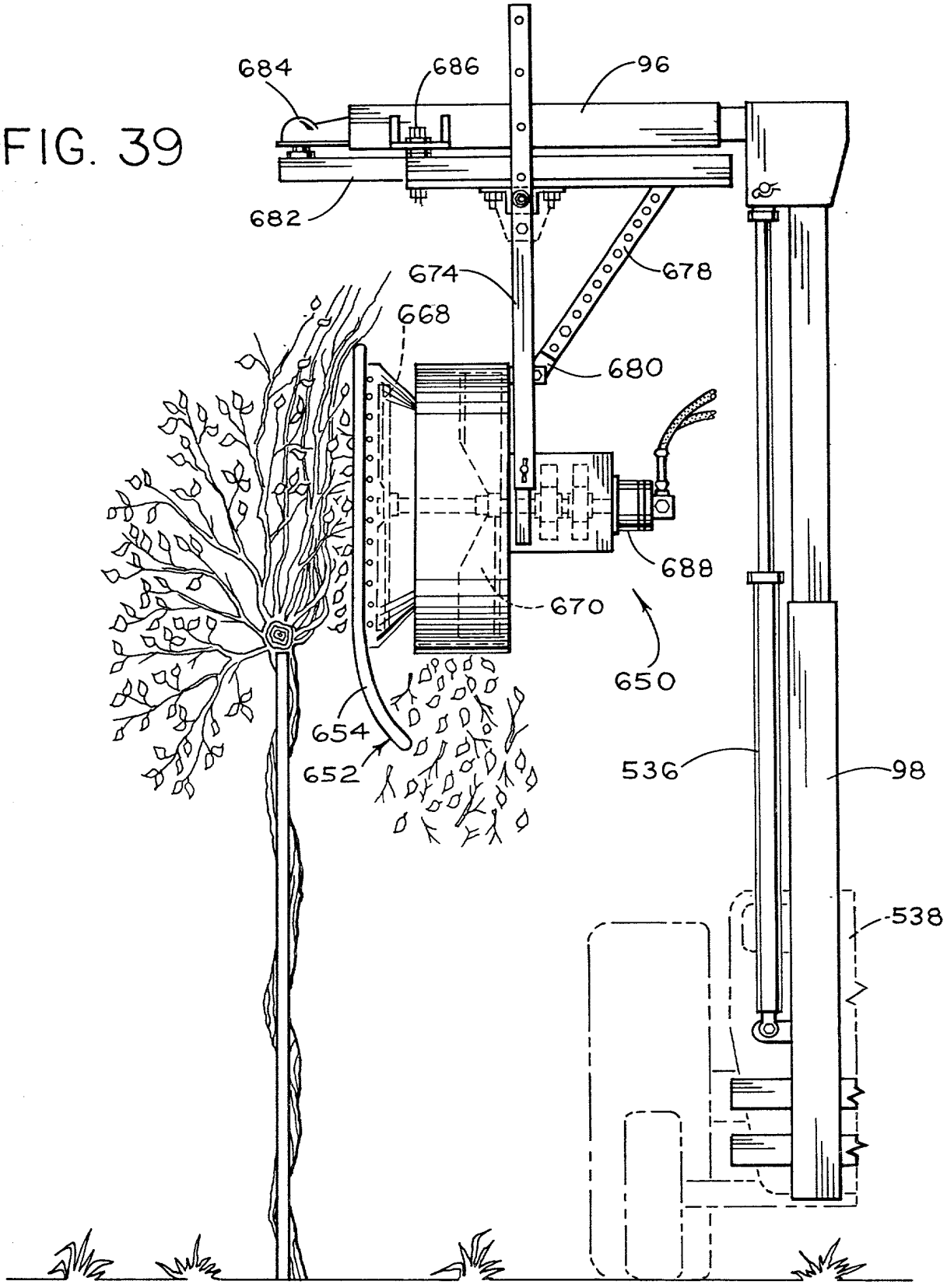


FIG. 38D

FIG. 39



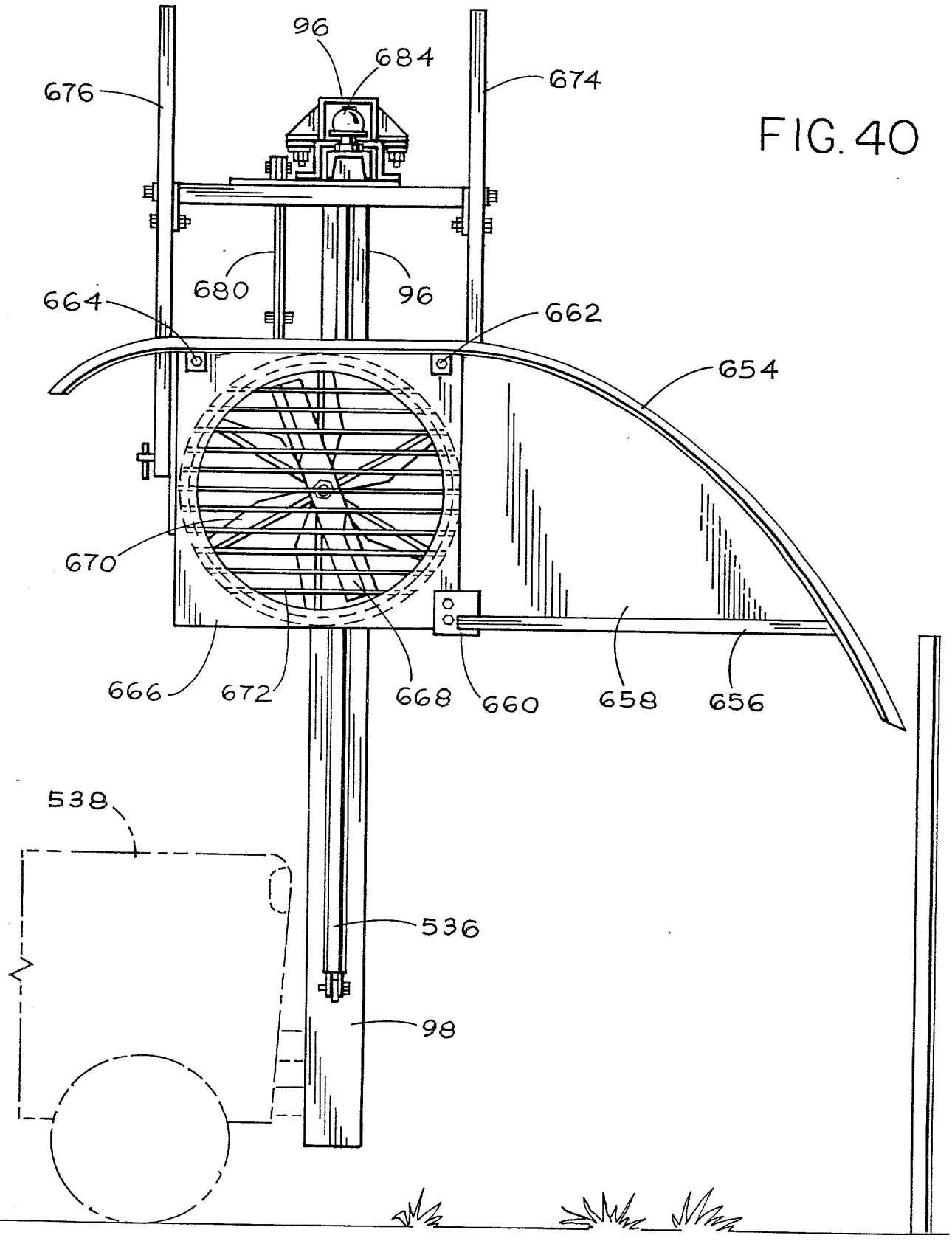

96
684
676
674
680
96
664
662
654
670
666
672
668
660
658
656
538
536
98

FIG. 40

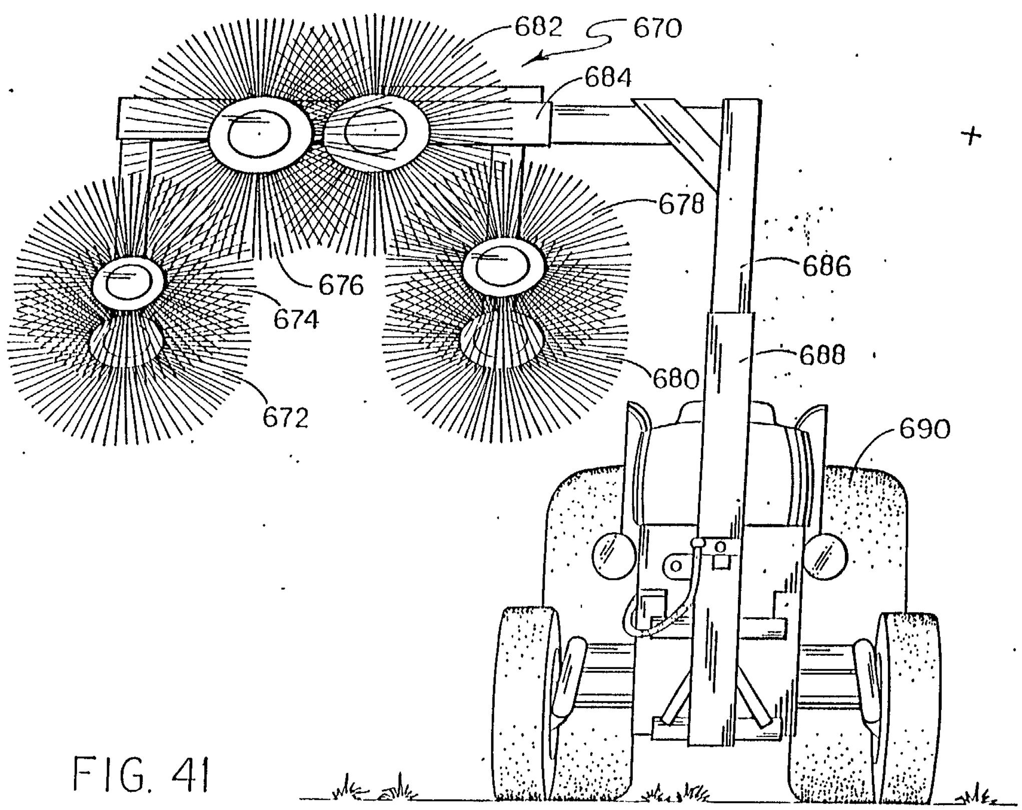


FIG. 41

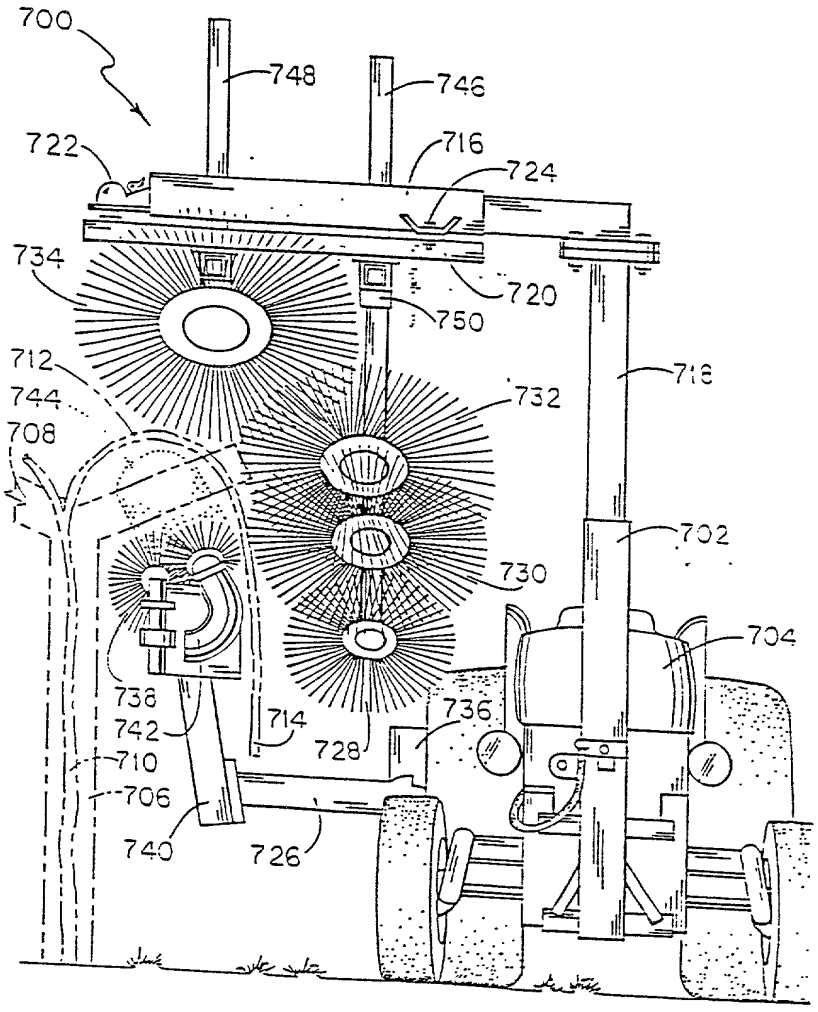

700
748
746
722
716
724
734
720
750
712
744
708
732
718
702
730
704
738
742
714
728
736
710
706
740
726

FIG. 42

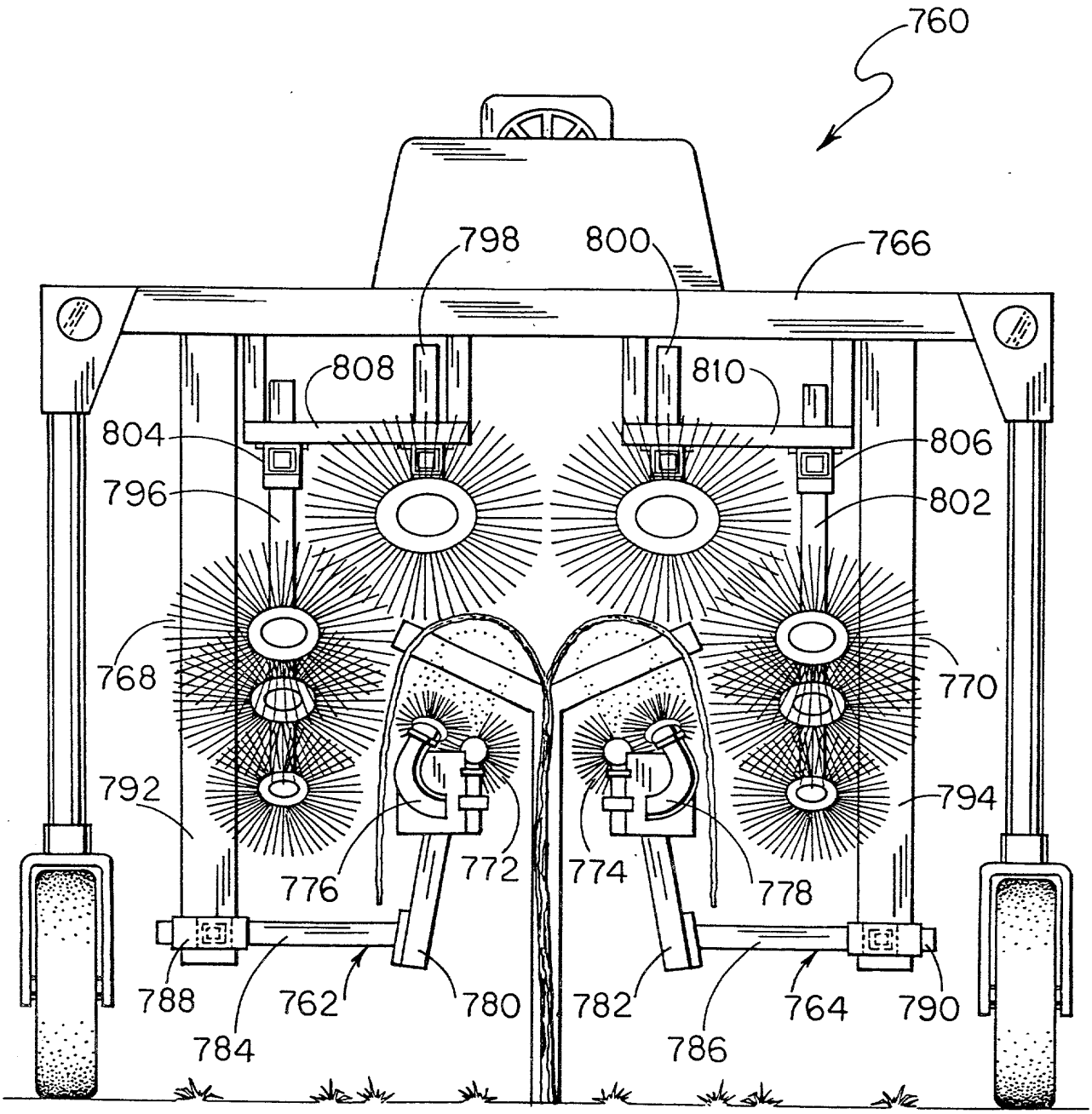

760
798
800
766
808
810
804
806
796
802
768
770
792
794
776
772
774
778
788
762
780
782
764
790
784
786

FIG. 42A

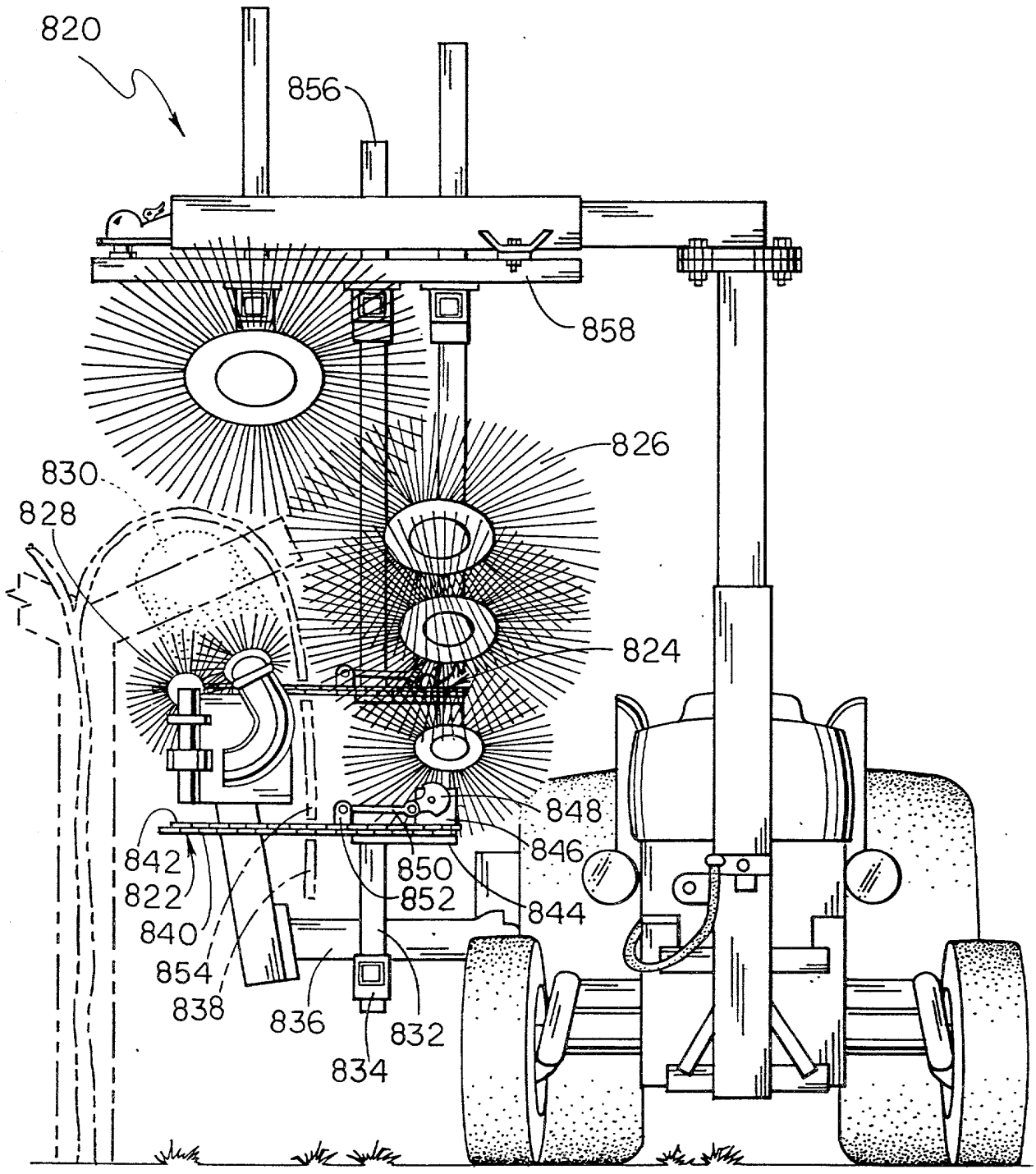

820
856
858
826
830
828
824
848
846
842
822
850
852
844
840
854
838
836
832
834

FIG. 43

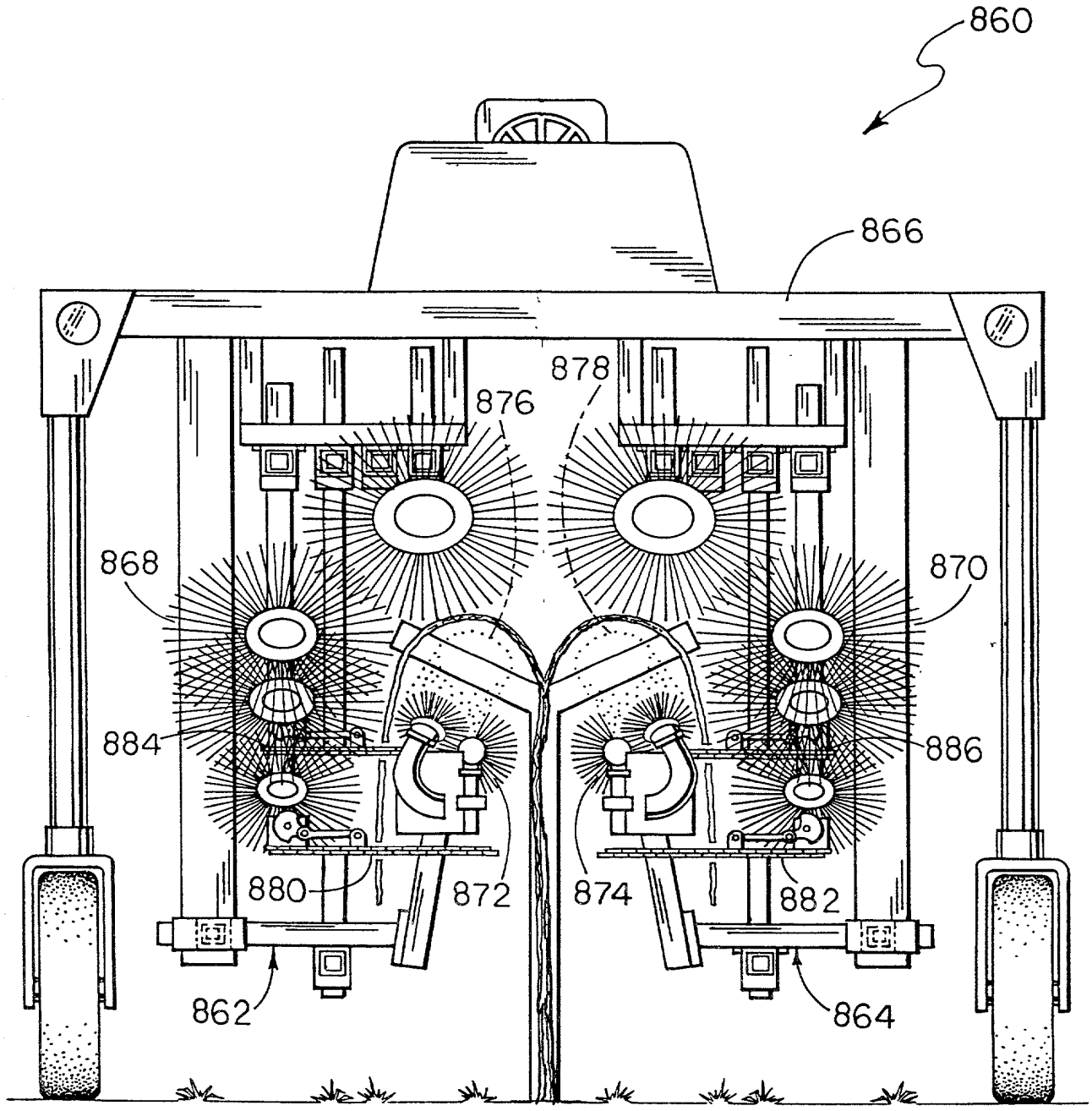


FIG. 43A

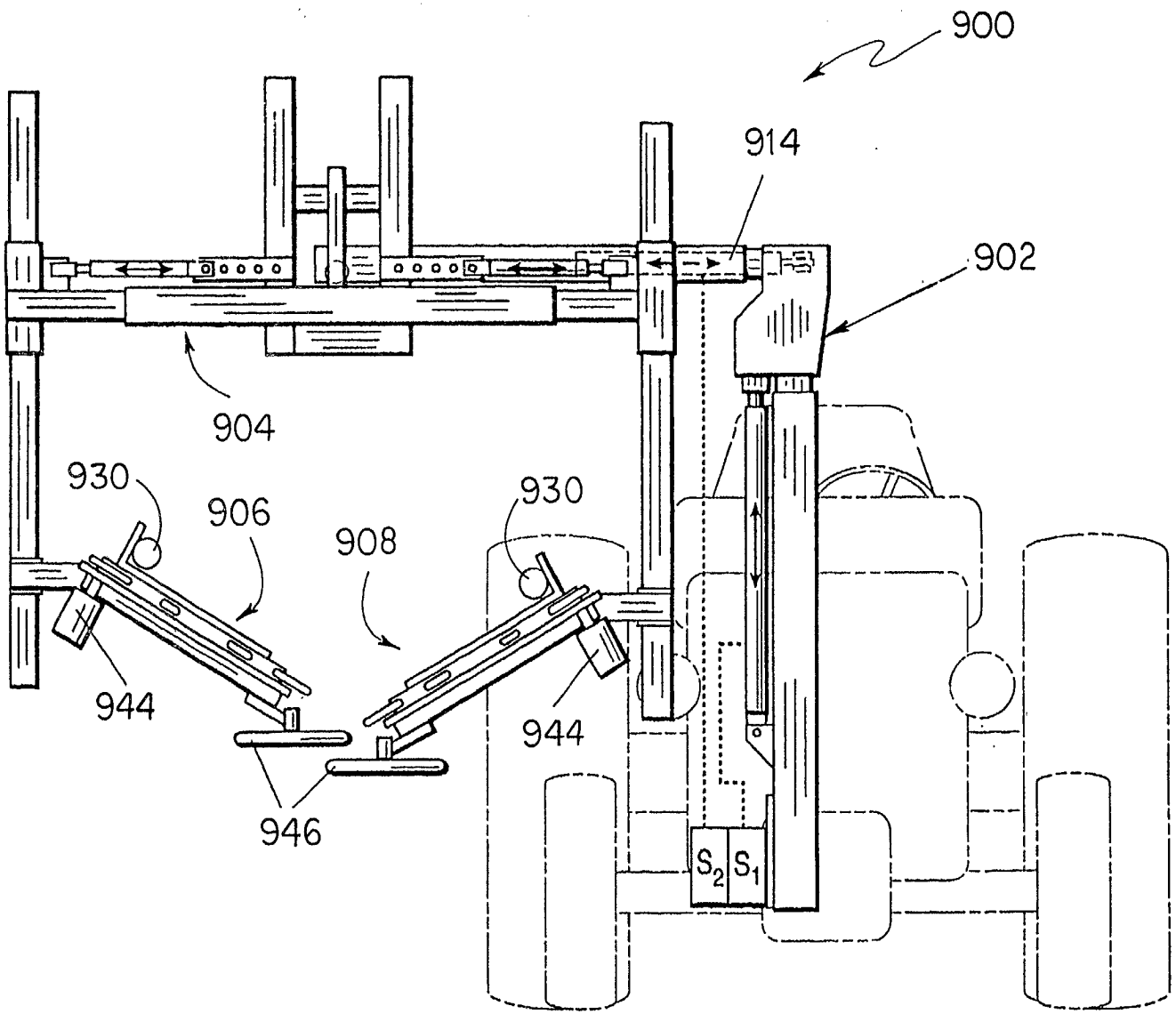
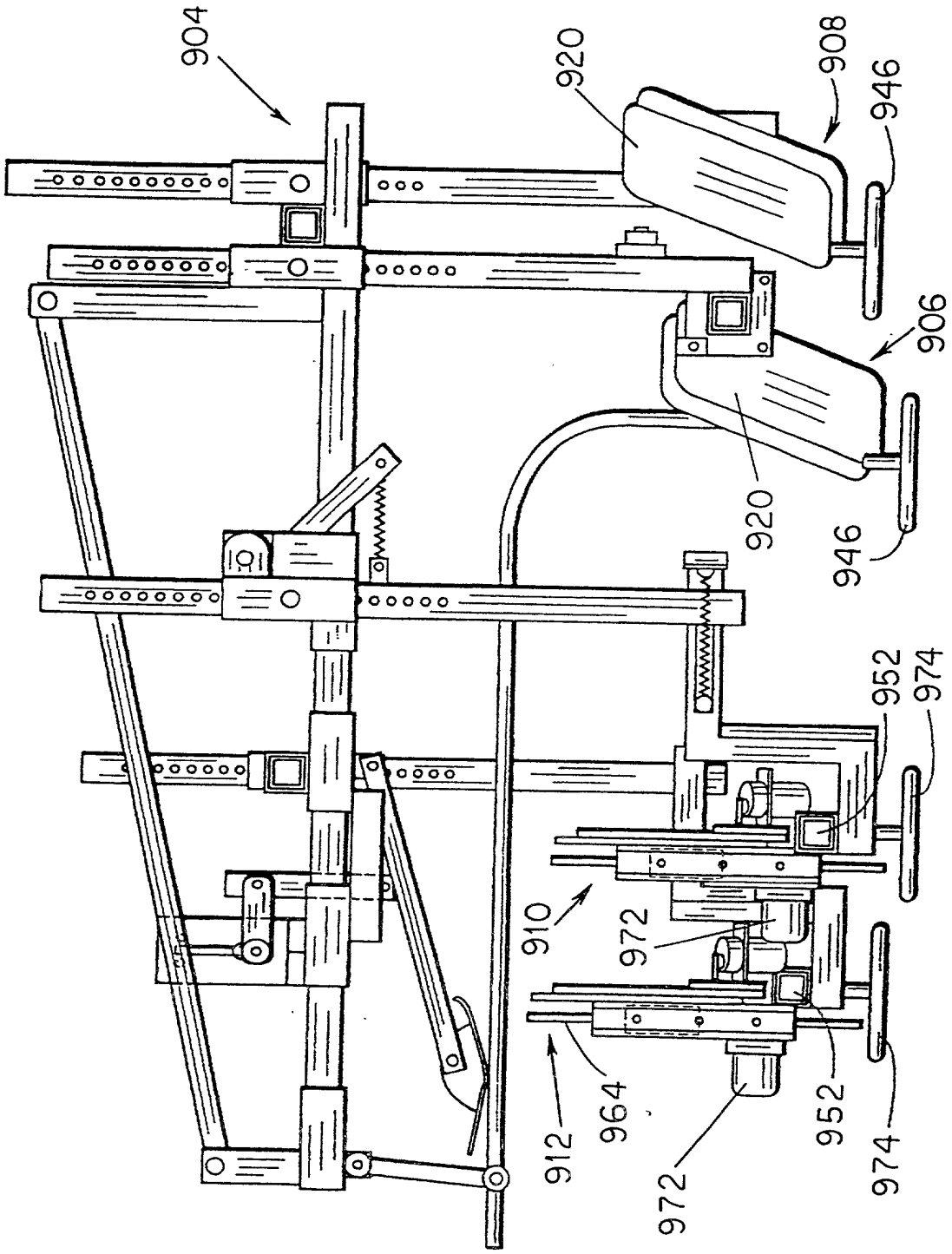


FIG. 44

FIG. 45



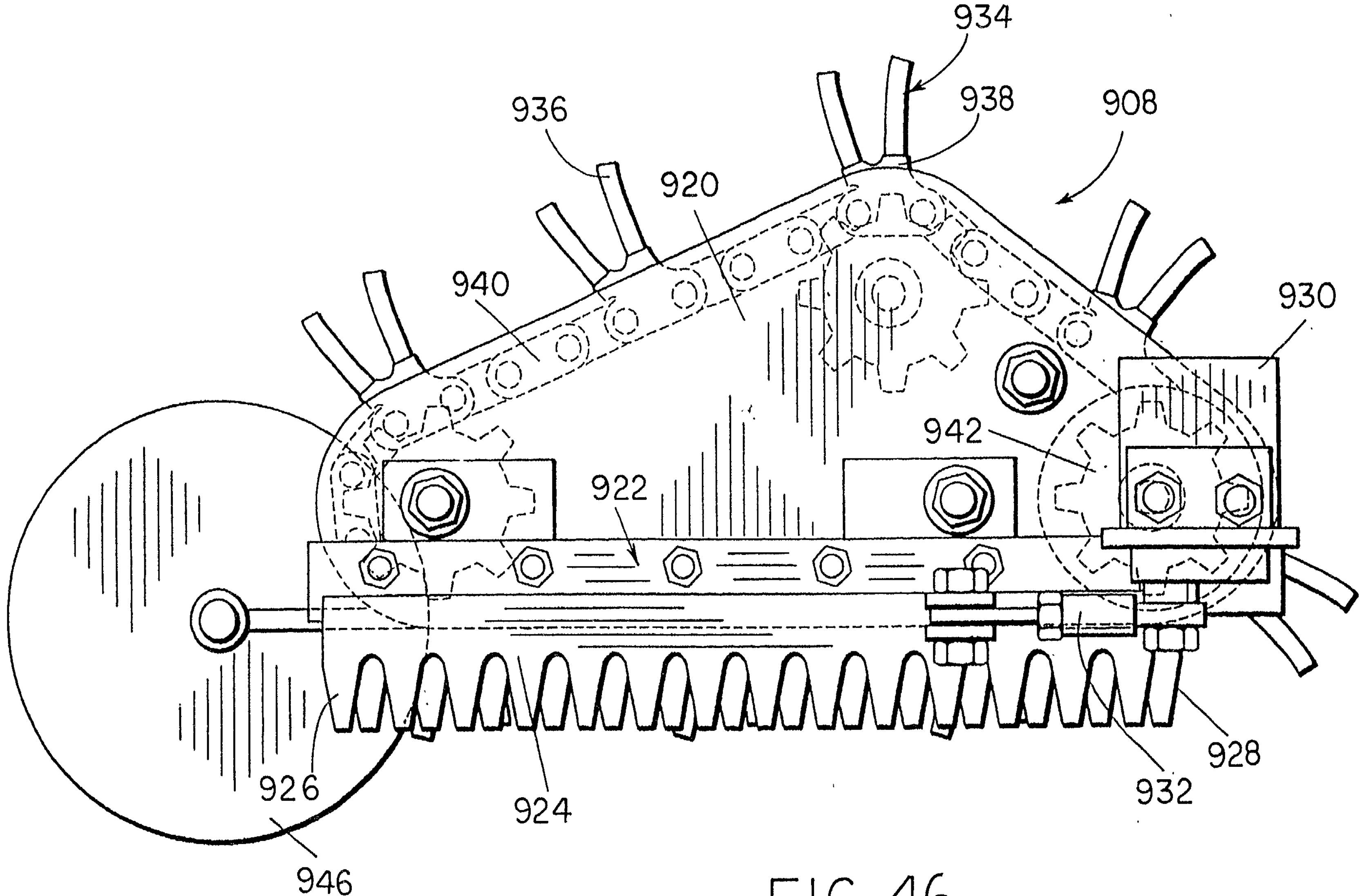


FIG. 46

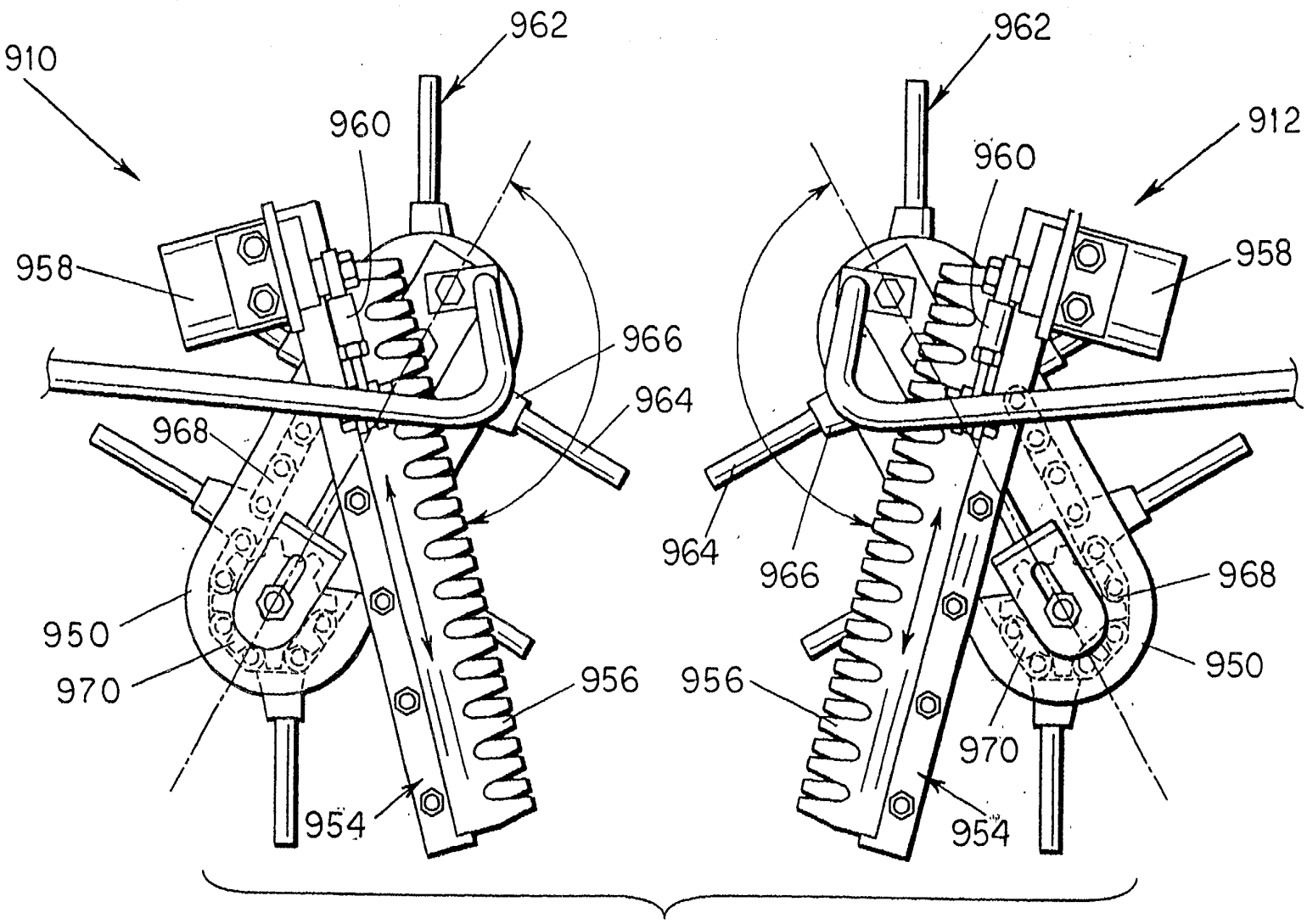


FIG. 47

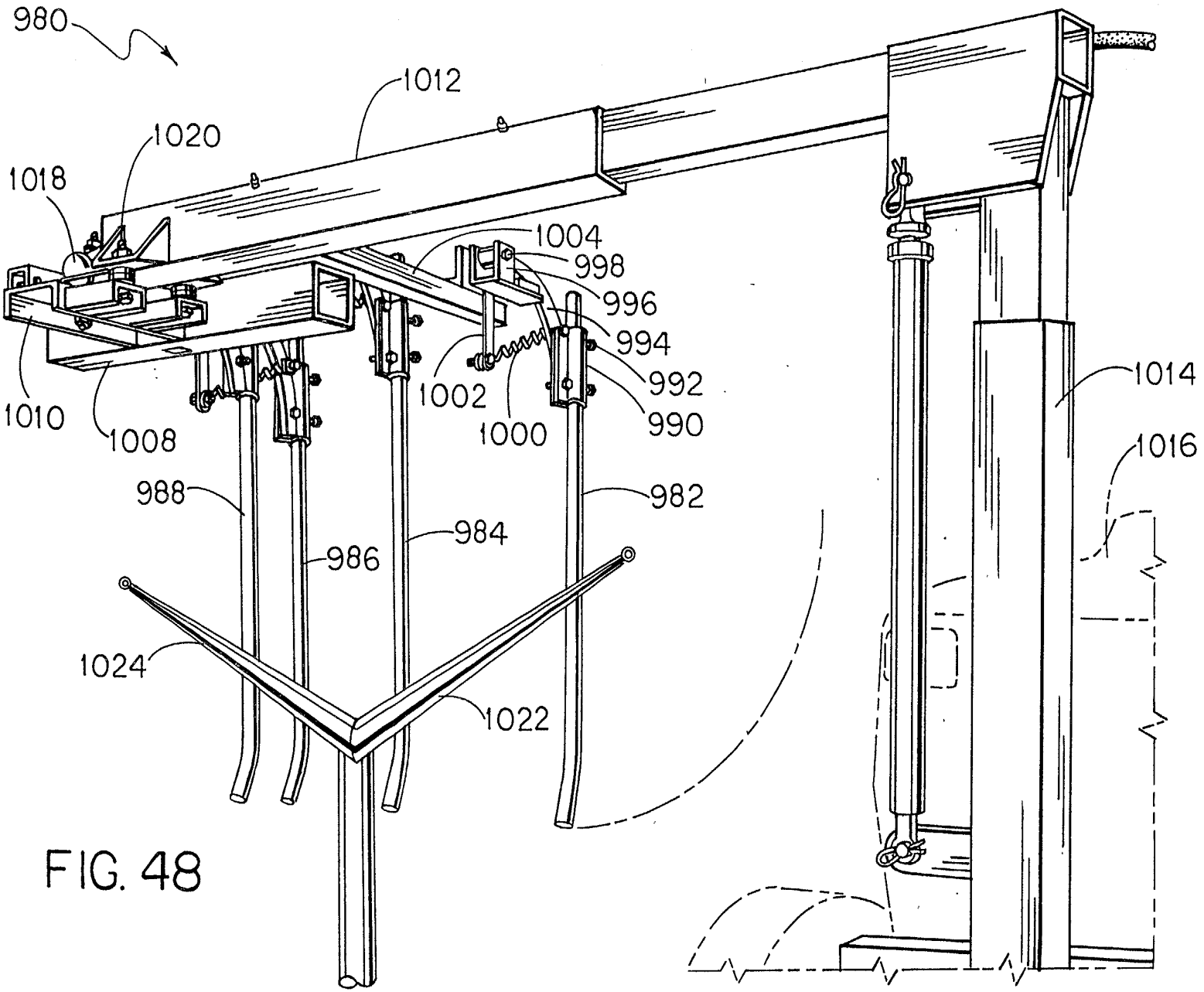

980
1012
1020
1018
1004
998
996
994
992
990
1002
1000
1010
1008
988
982
984
986
1024
1022
1014
1016

FIG. 48

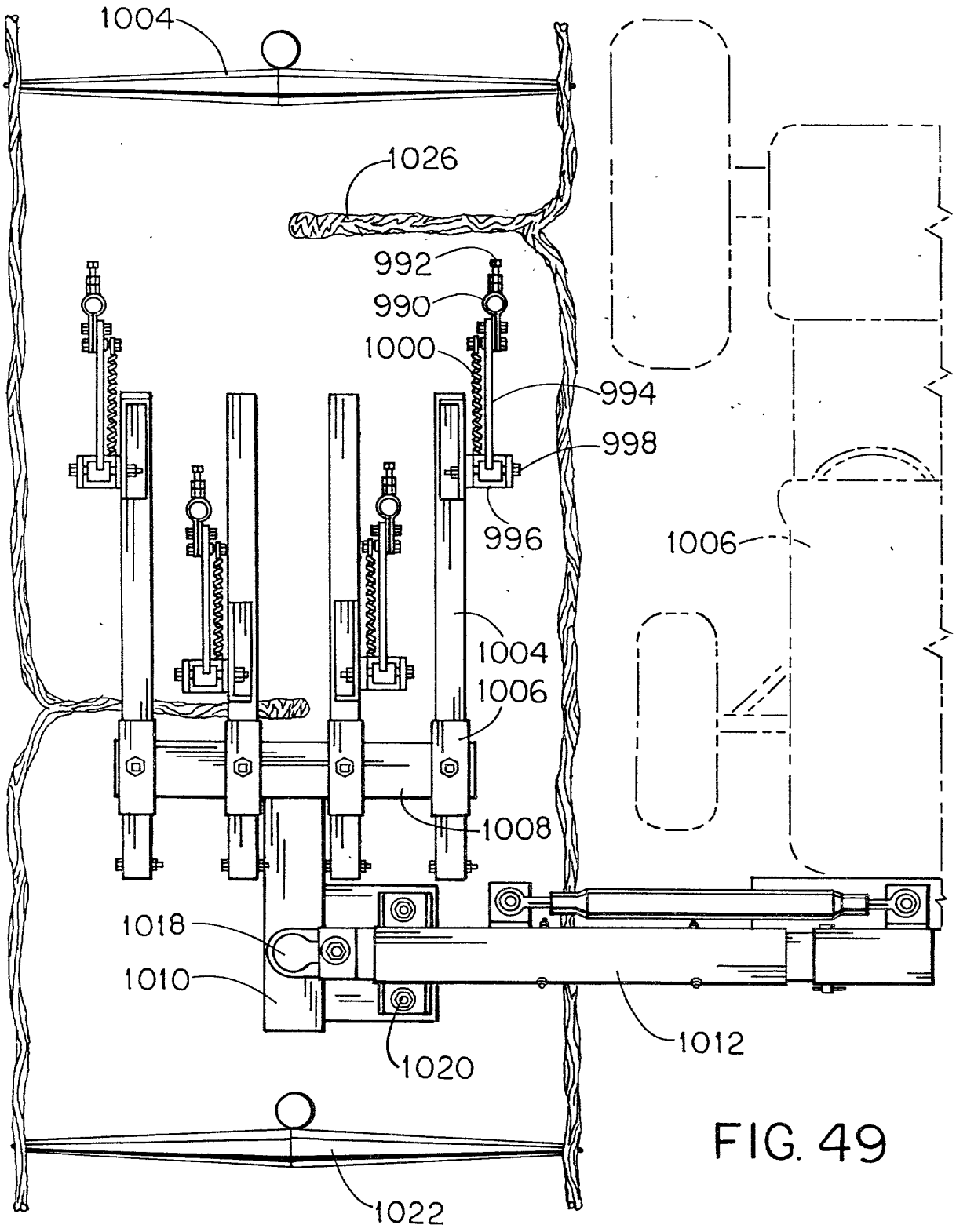

1004
1026
992
990
1000
994
998
996
1006
1004
1006
1008
1018
1010
1020
1012
1022

FIG. 49

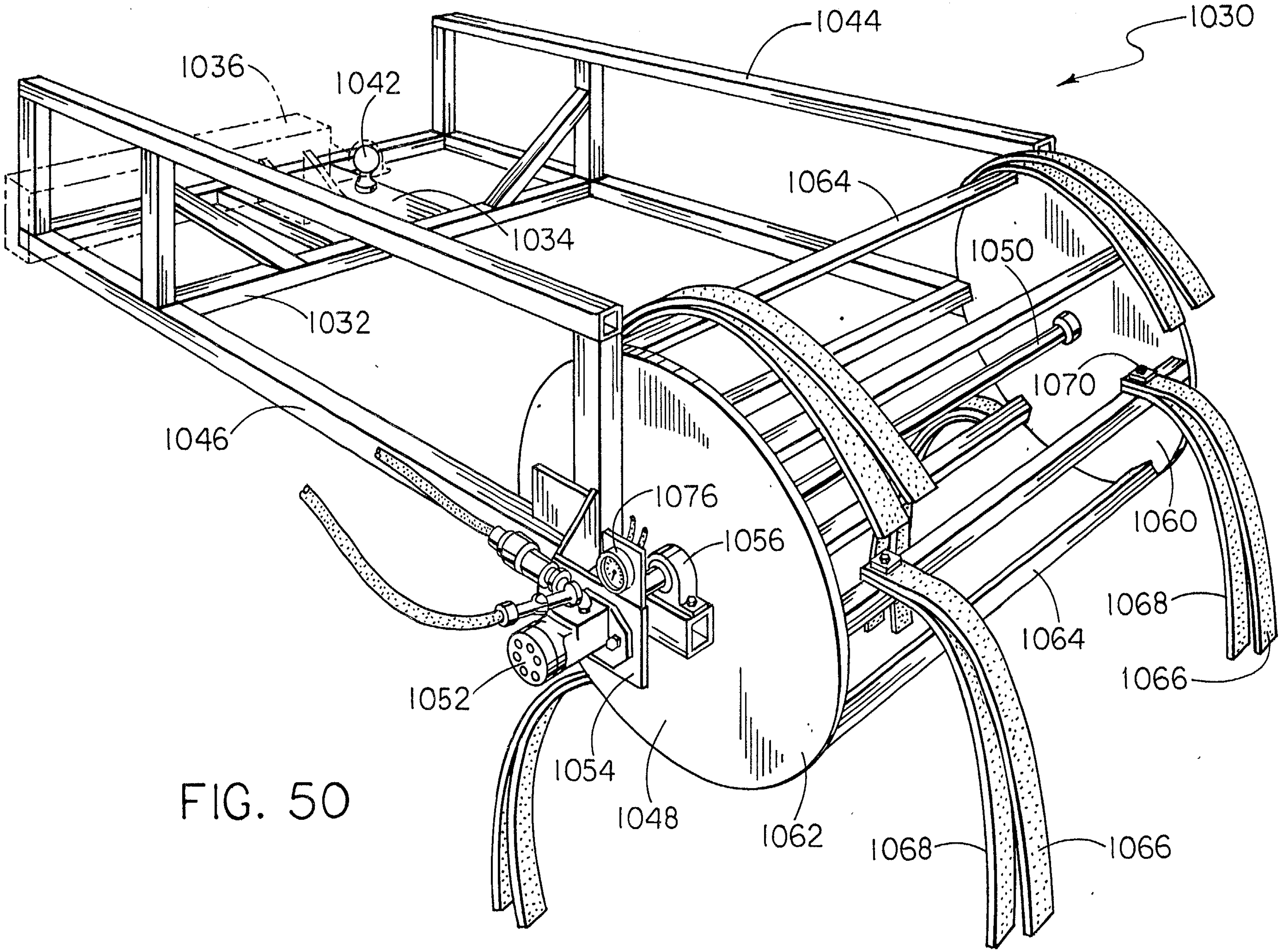

1030
1044
1036
1042
1064
1034
1050
1032
1070
1046
1076
1056
1060
1068
1064
1066
1052
1054
1048
1062
1068
1066

FIG. 50

FIG. 51

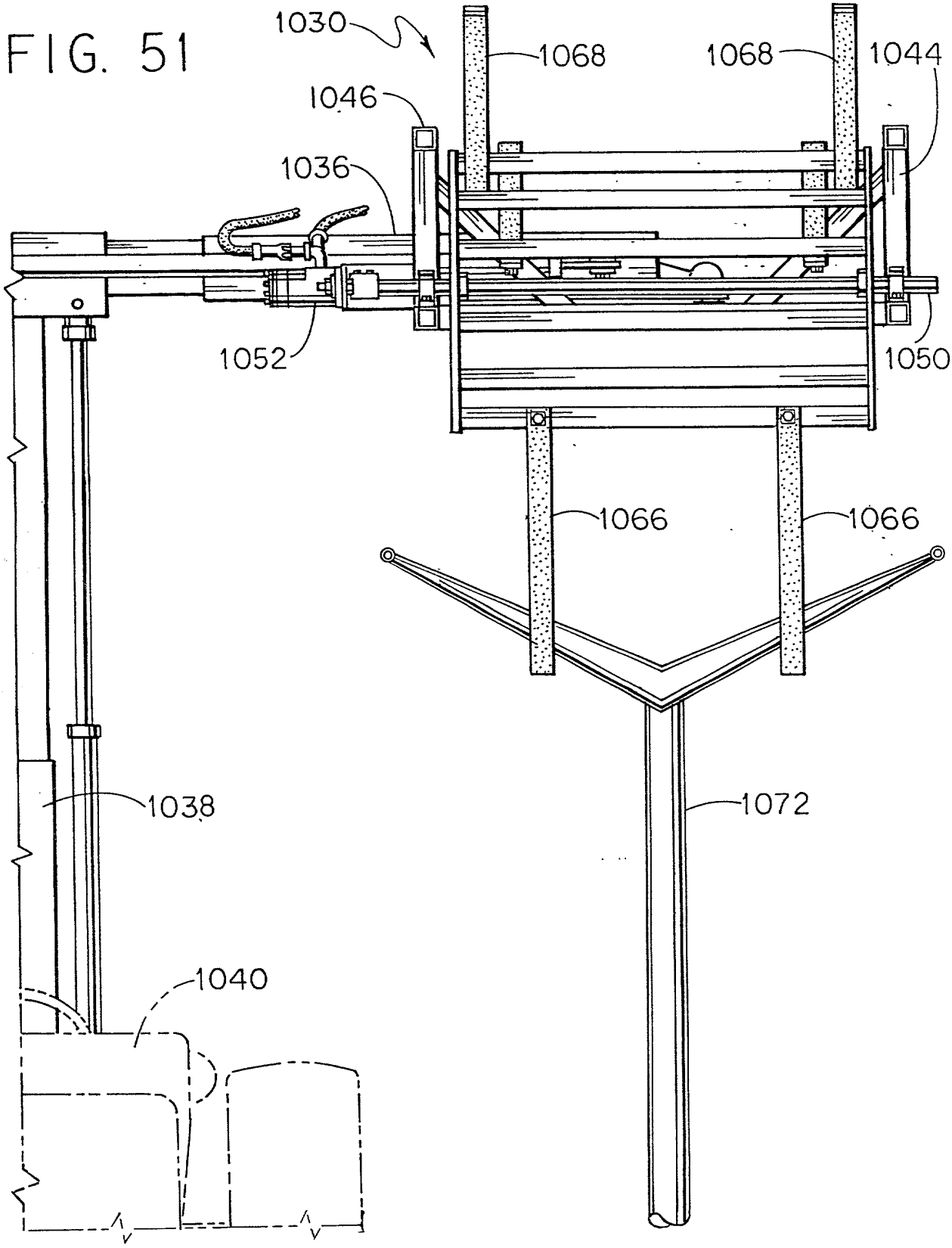
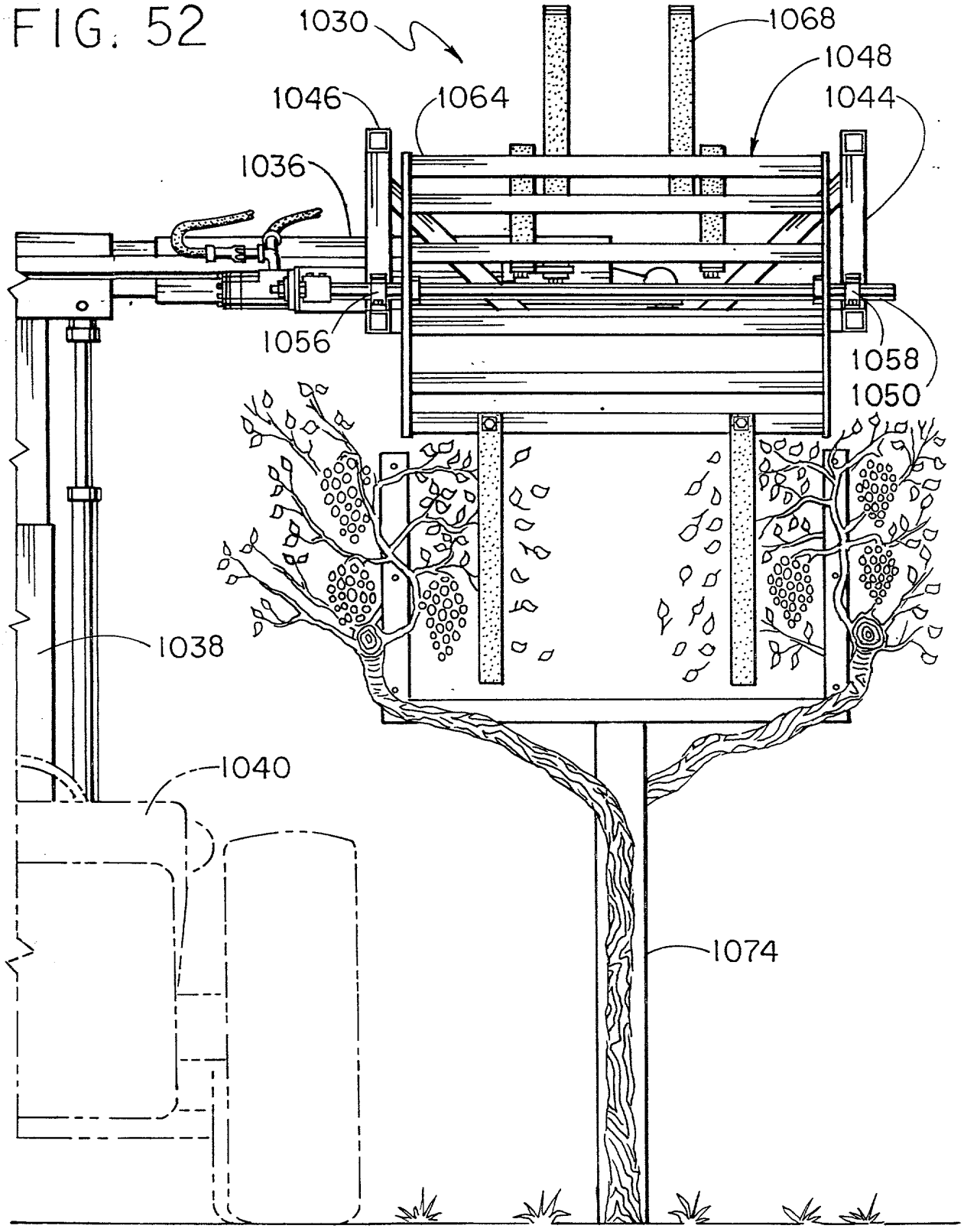

1030
1068
1068
1044
1046
1036
1052
1050
1066
1066
1038
1072
1040

FIG. 52


1030
1068
1048
1046
1064
1044
1036
1056
1058
1050
1038
1040
1074

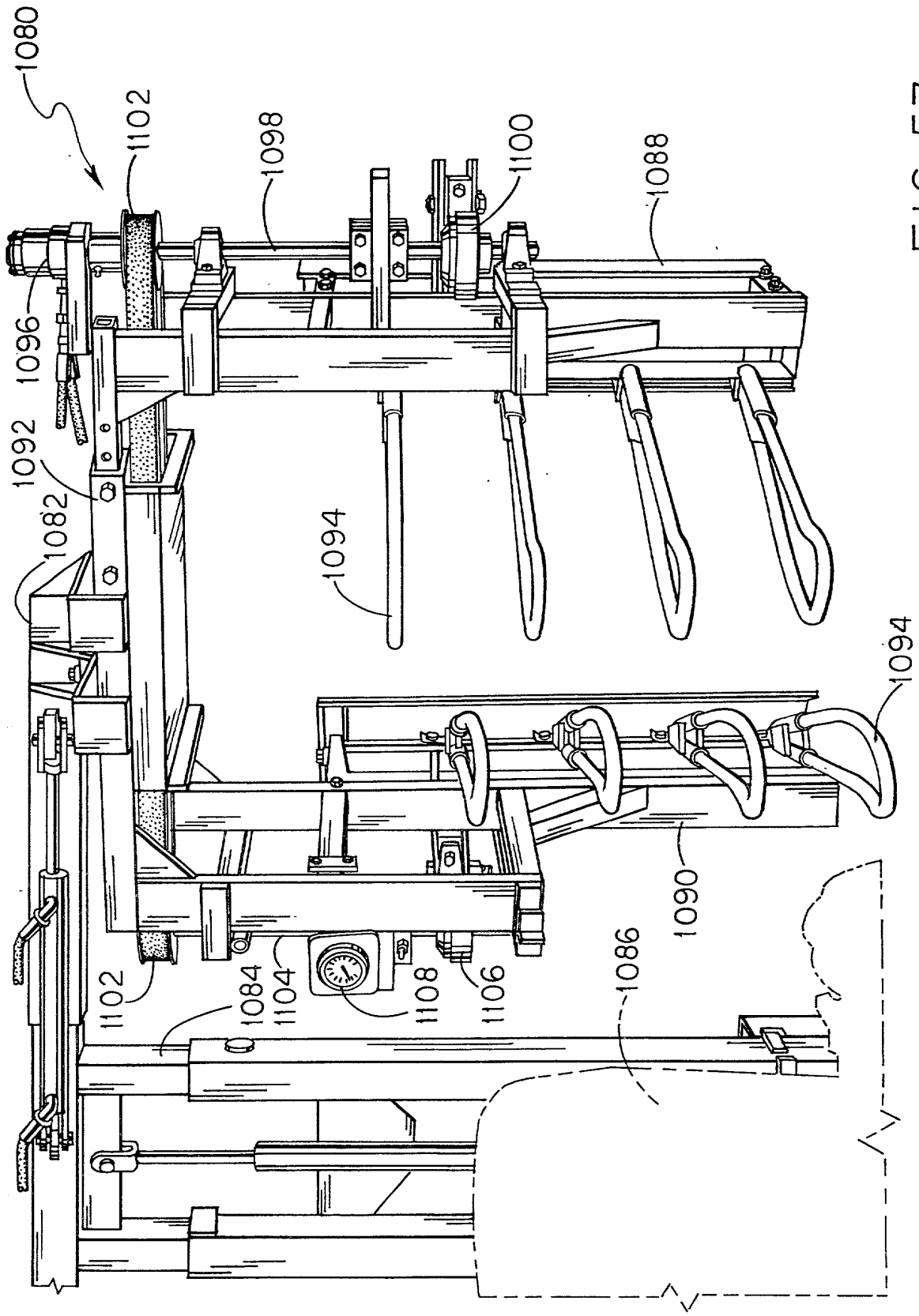

1080
1102
1098
1100
1088
1096
1092
1082
1094
1094
1090
1086
1102
1084
1104
1108
1106

FIG. 53

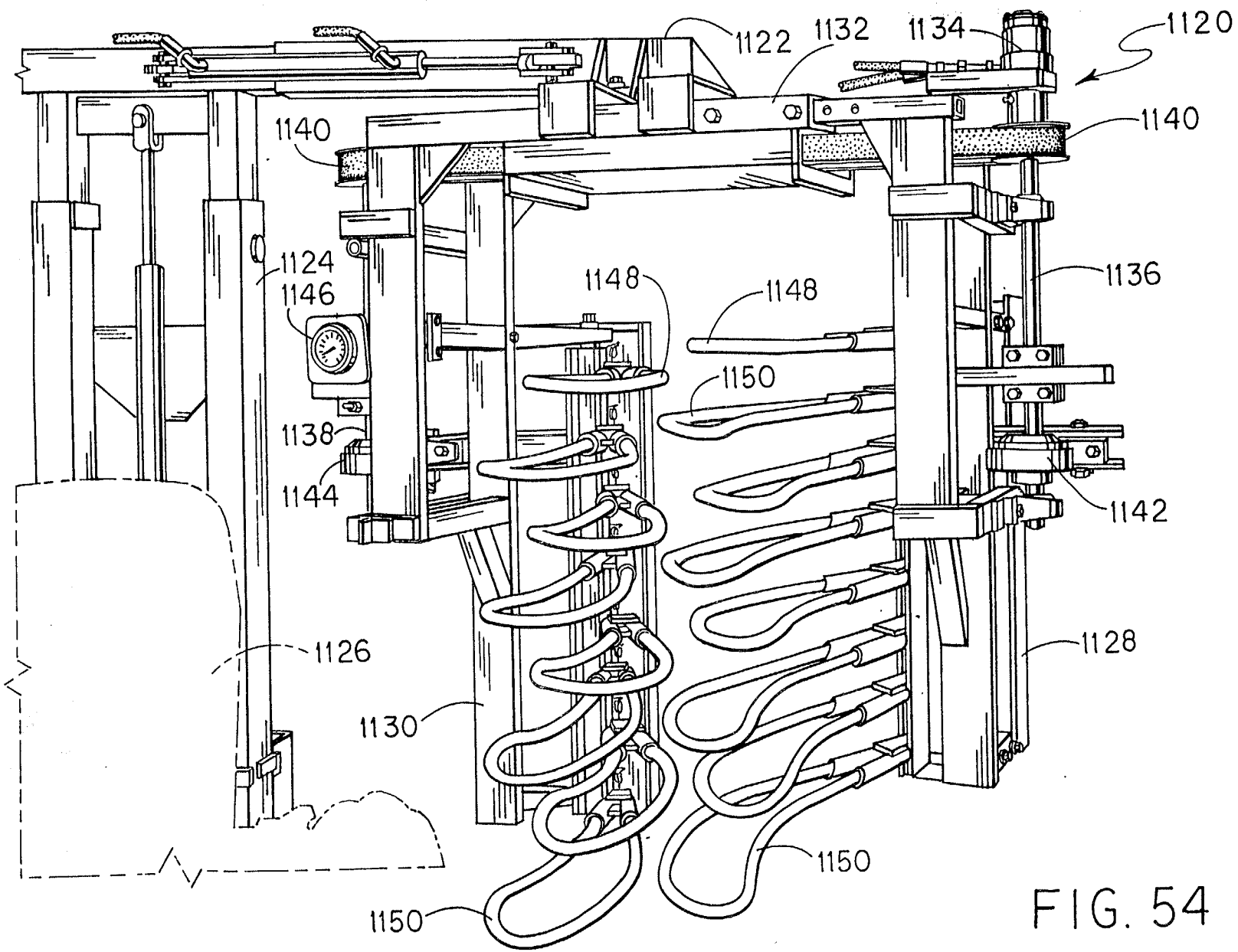

1122
1132
1134
1120
1140
1140
1124
1146
1148
1148
1136
1150
1138
1144
1142
1126
1128
1130
1150
1150

FIG. 54

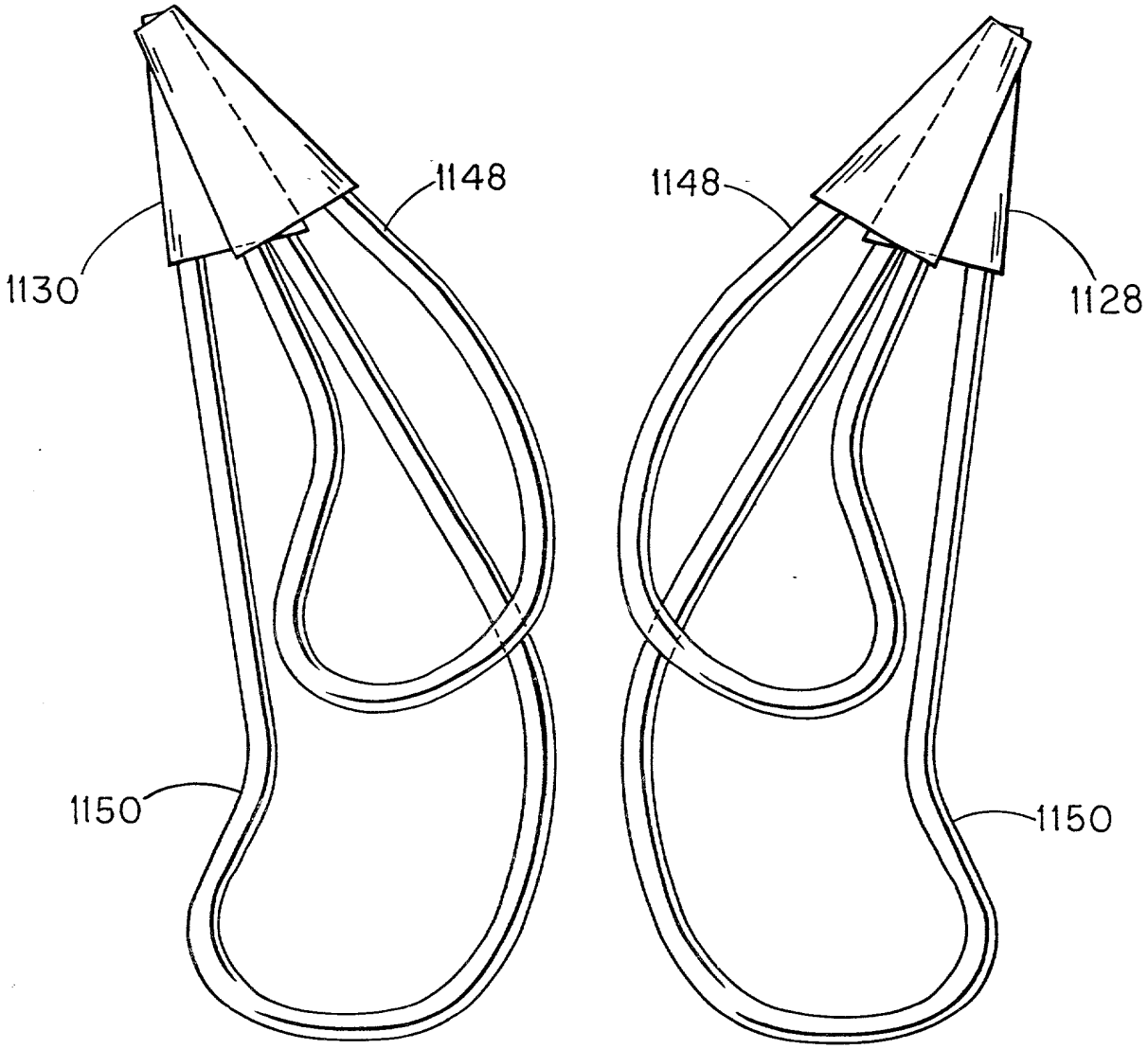


FIG. 55

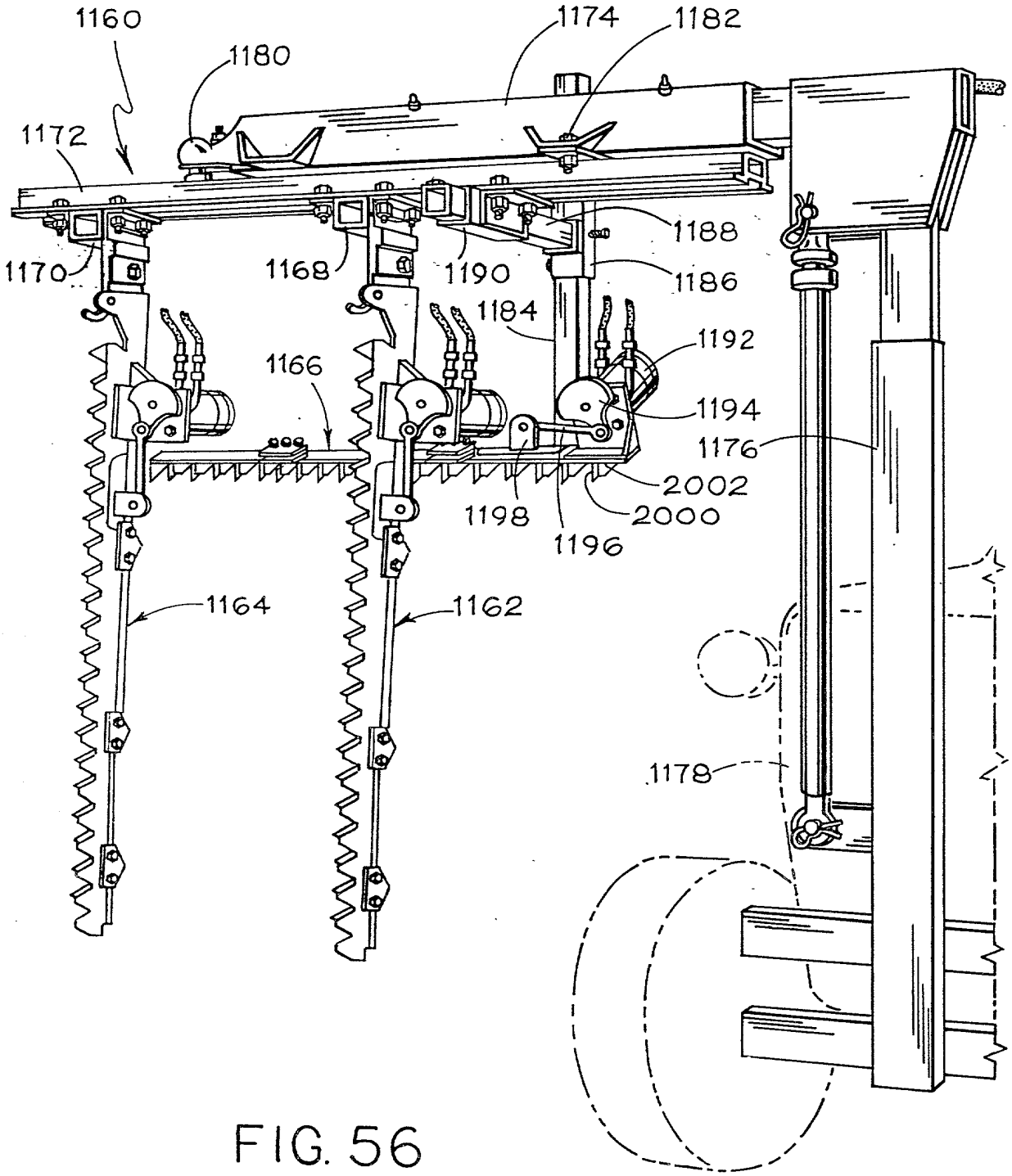

1160
1180
1172
1174
1182
1188
1170
1168
1190
1186
1184
1192
1166
1194
1176
2002
1198
2000
1196
1164
1162
1178

FIG. 56

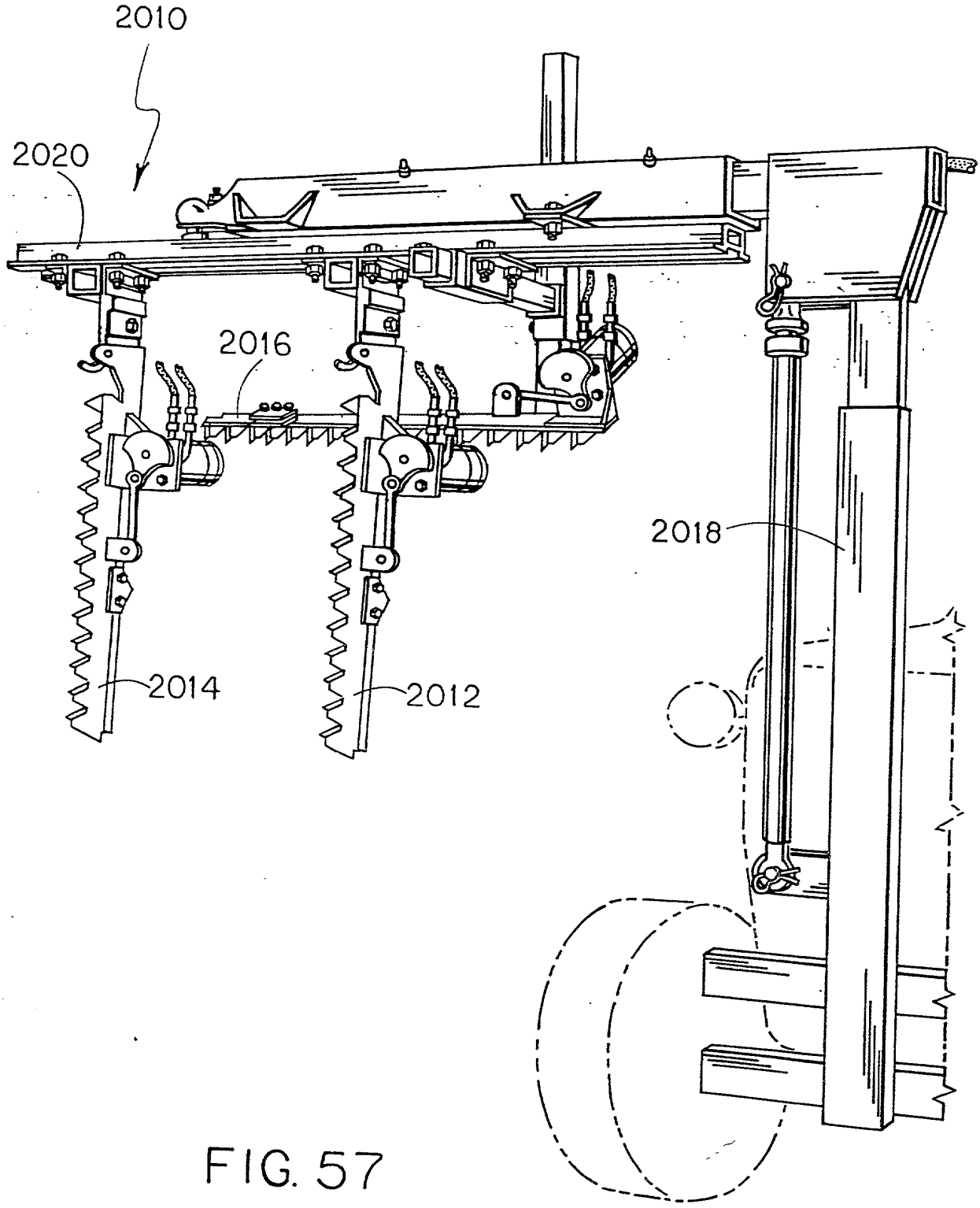


FIG. 57

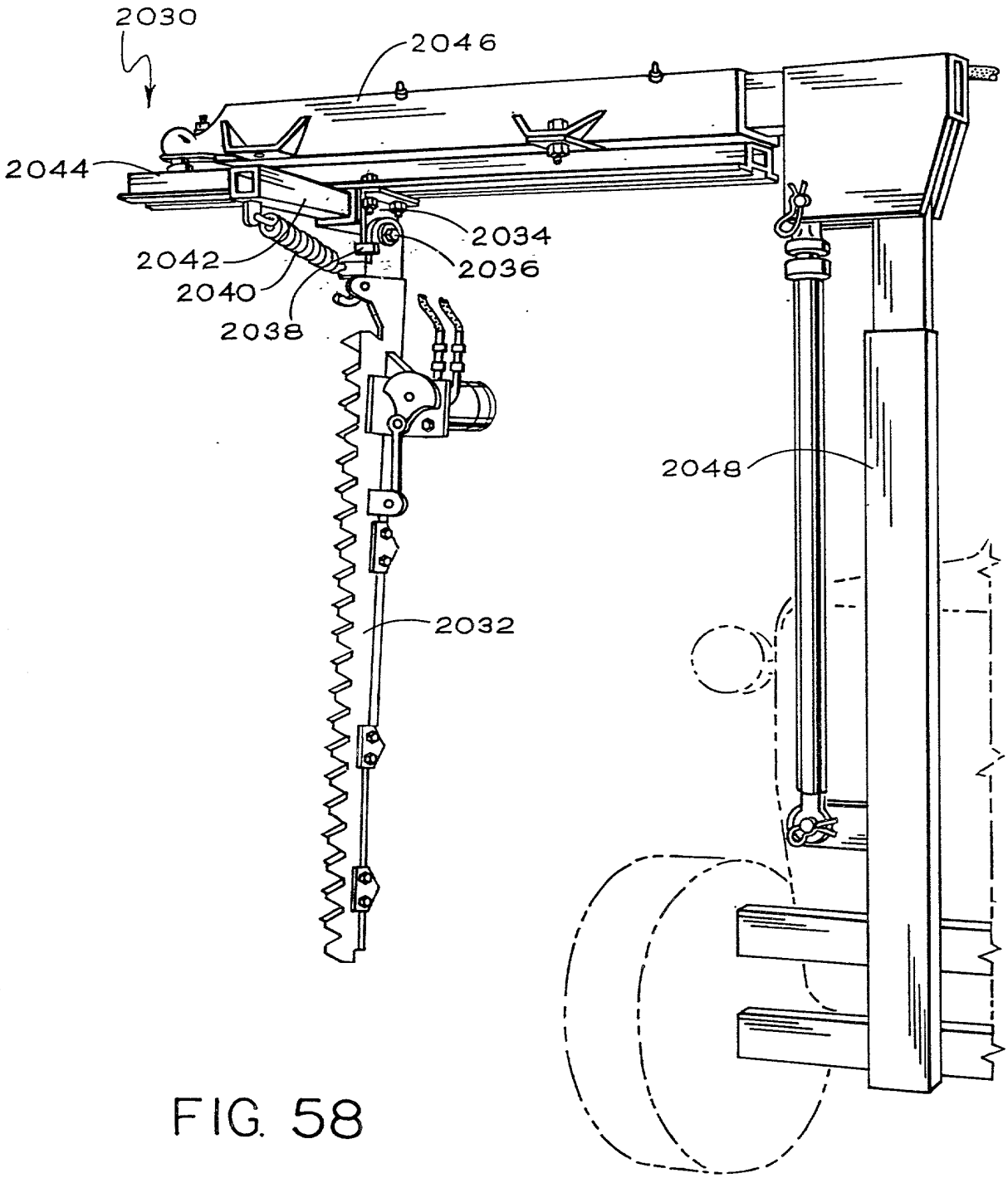


FIG. 58

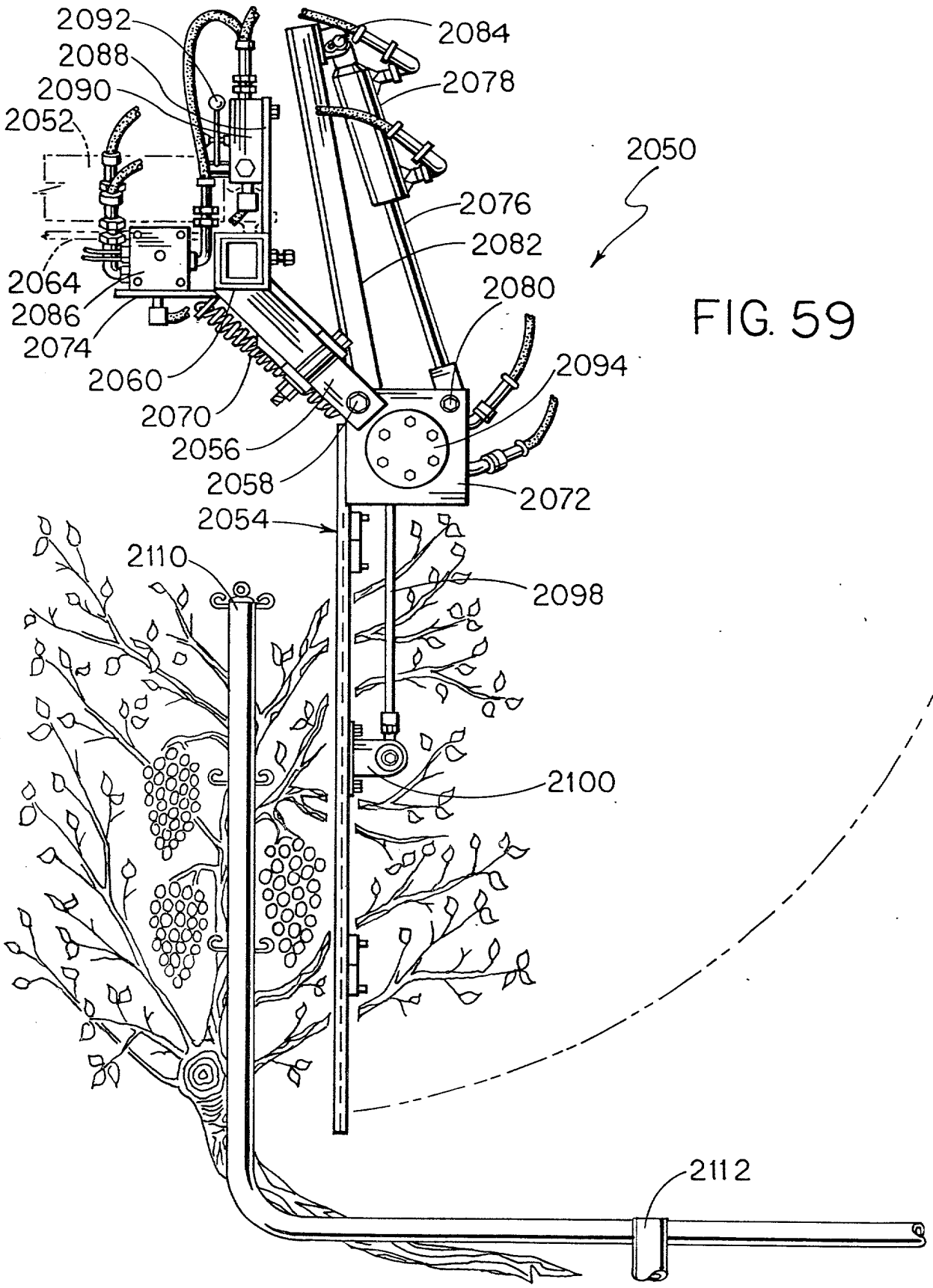

2092
2088
2090
2052
2064
2086
2074
2060
2070
2056
2058
2054
2110
2084
2078
2050
2076
2082
2080
2094
2072
2098
2100
2112

FIG. 59

FIG. 60

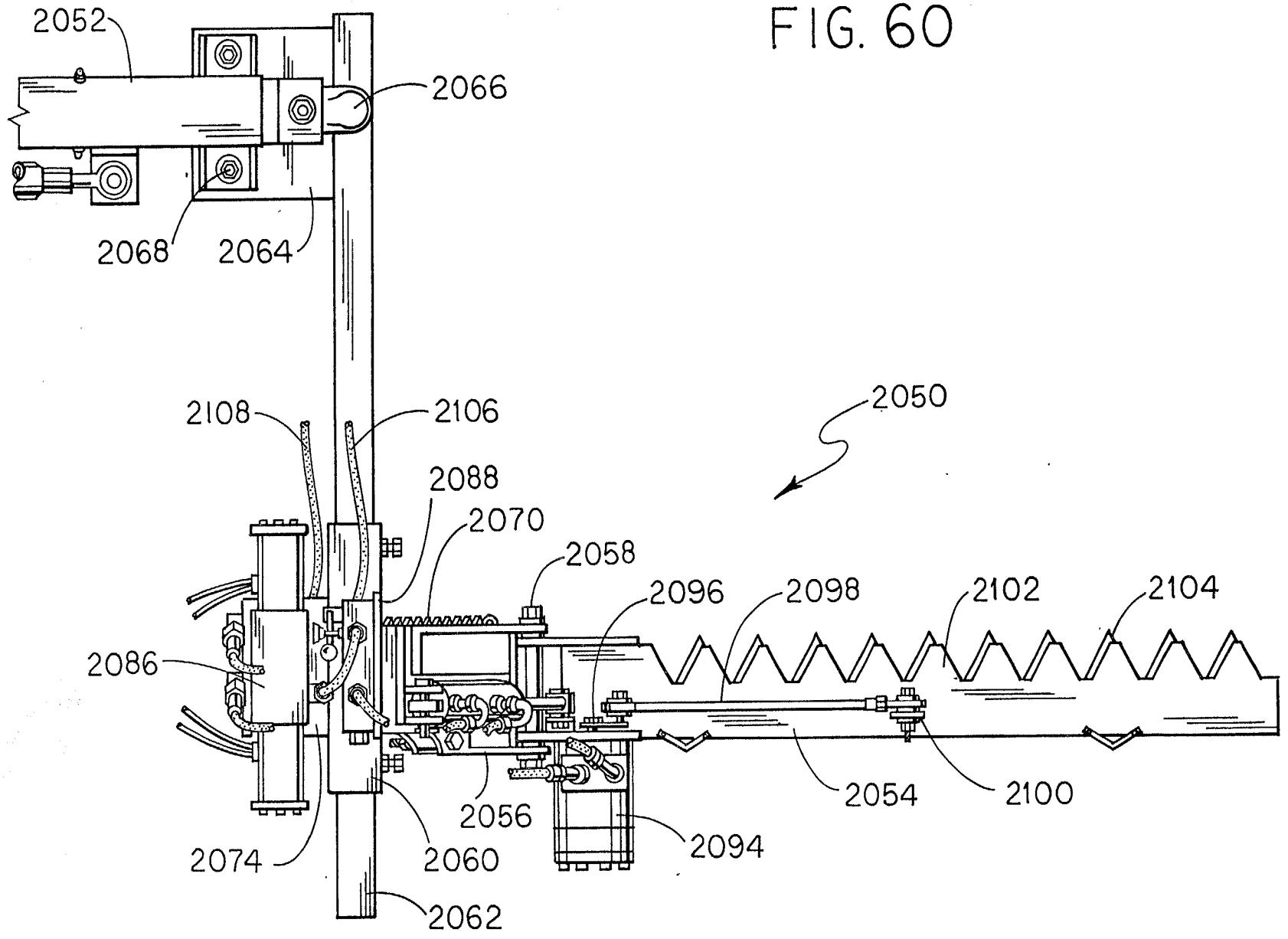

2052
2066
2068
2064
2108
2106
2088
2070
2058
2050
2096
2098
2102
2104
2086
2054
2100
2056
2074
2060
2094
2062

FIG. 61

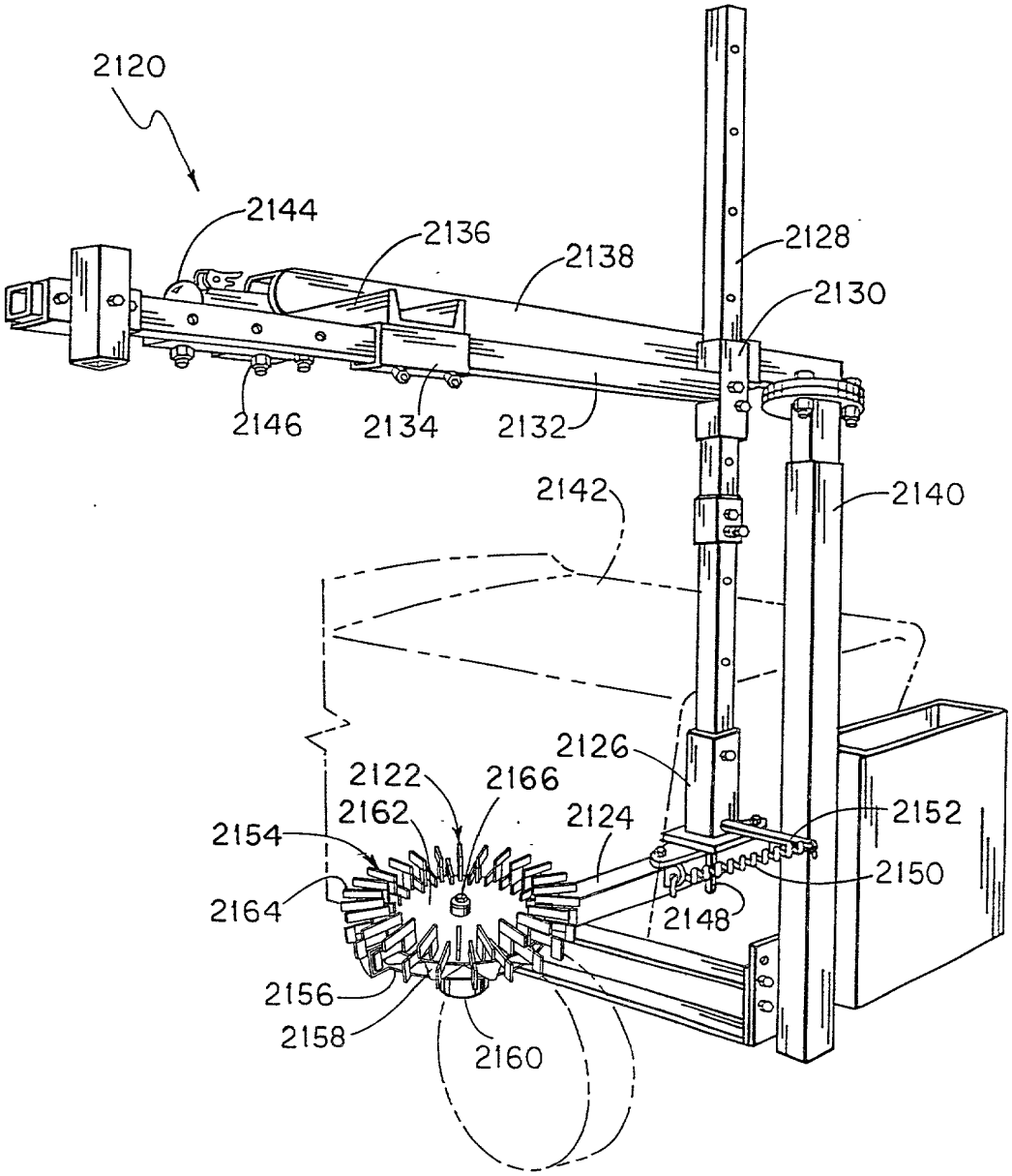

2120
2144
2136
2138
2128
2130
2146
2134
2132
2142
2140
2126
2122
2166
2162
2124
2152
2154
2150
2164
2148
2156
2158
2160

FIG. 62

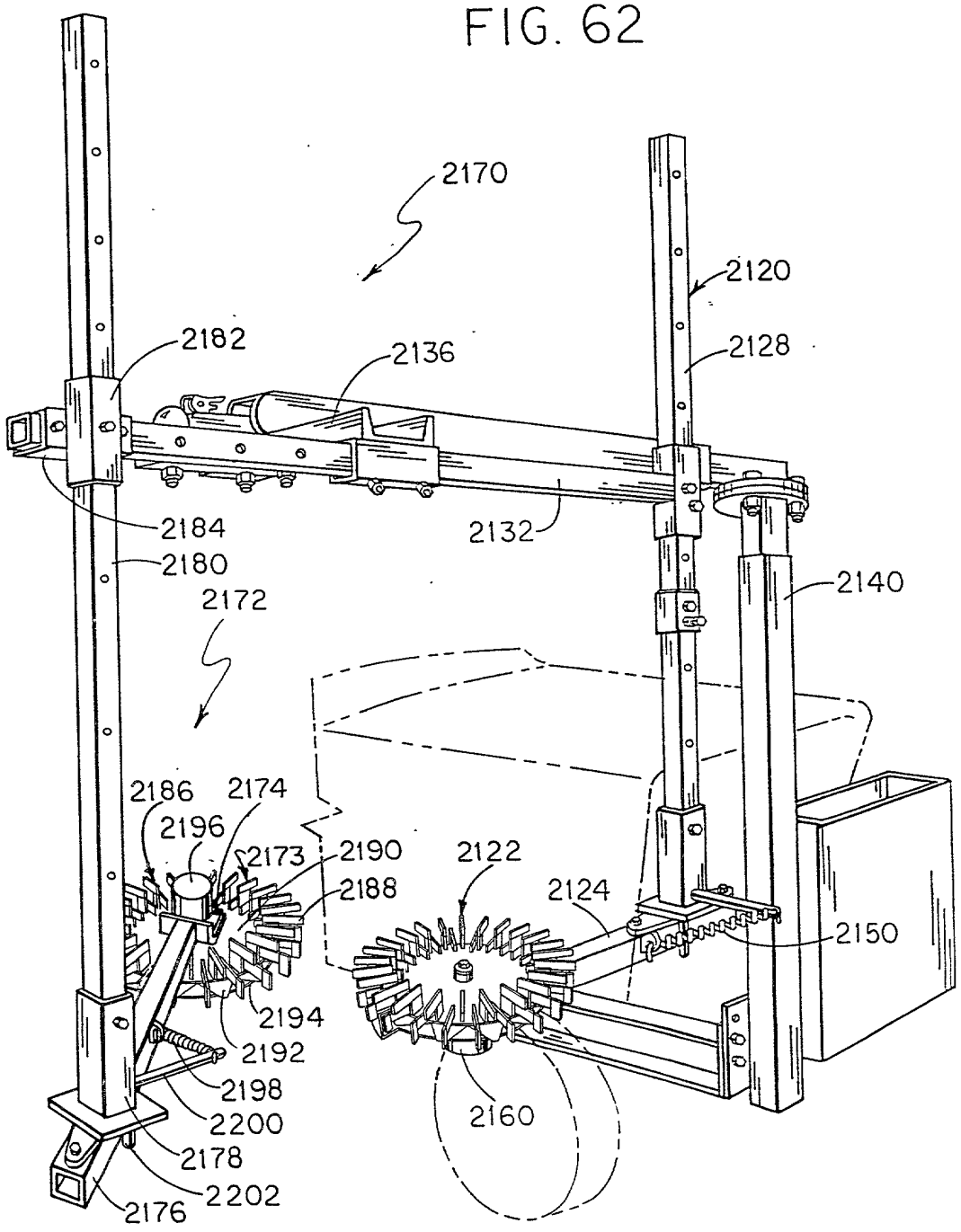
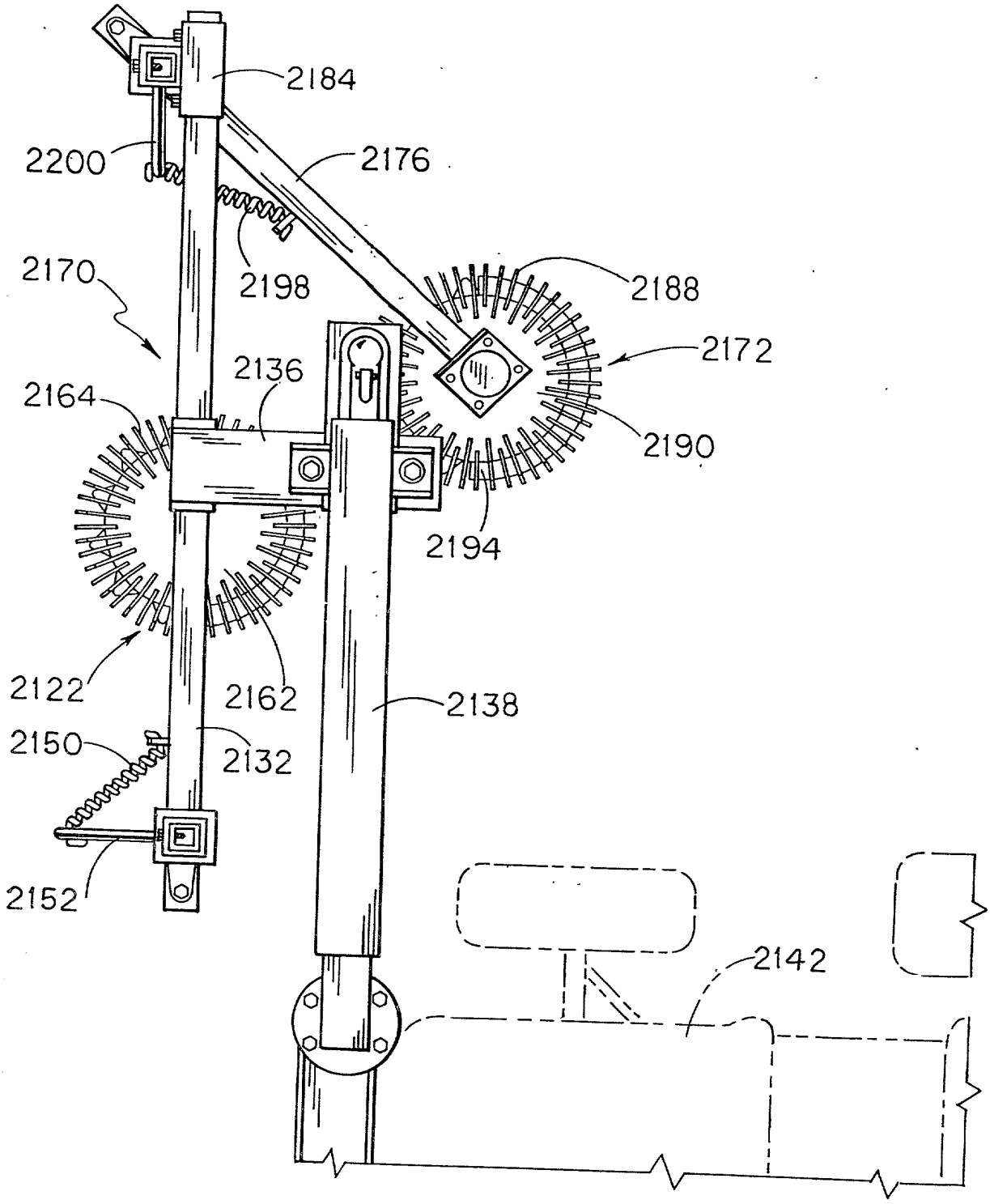

2170
2120
2182
2136
2128
2184
2132
2180
2140
2172
2186
2174
2196
2173
2190
2122
2188
2124
2150
2194
2192
2198
2200
2160
2178
2202
2176

FIG. 63


2184
2200
2176
2198
2170
2188
2172
2136
2164
2190
2194
2122
2162
2138
2150
2132
2152
2142

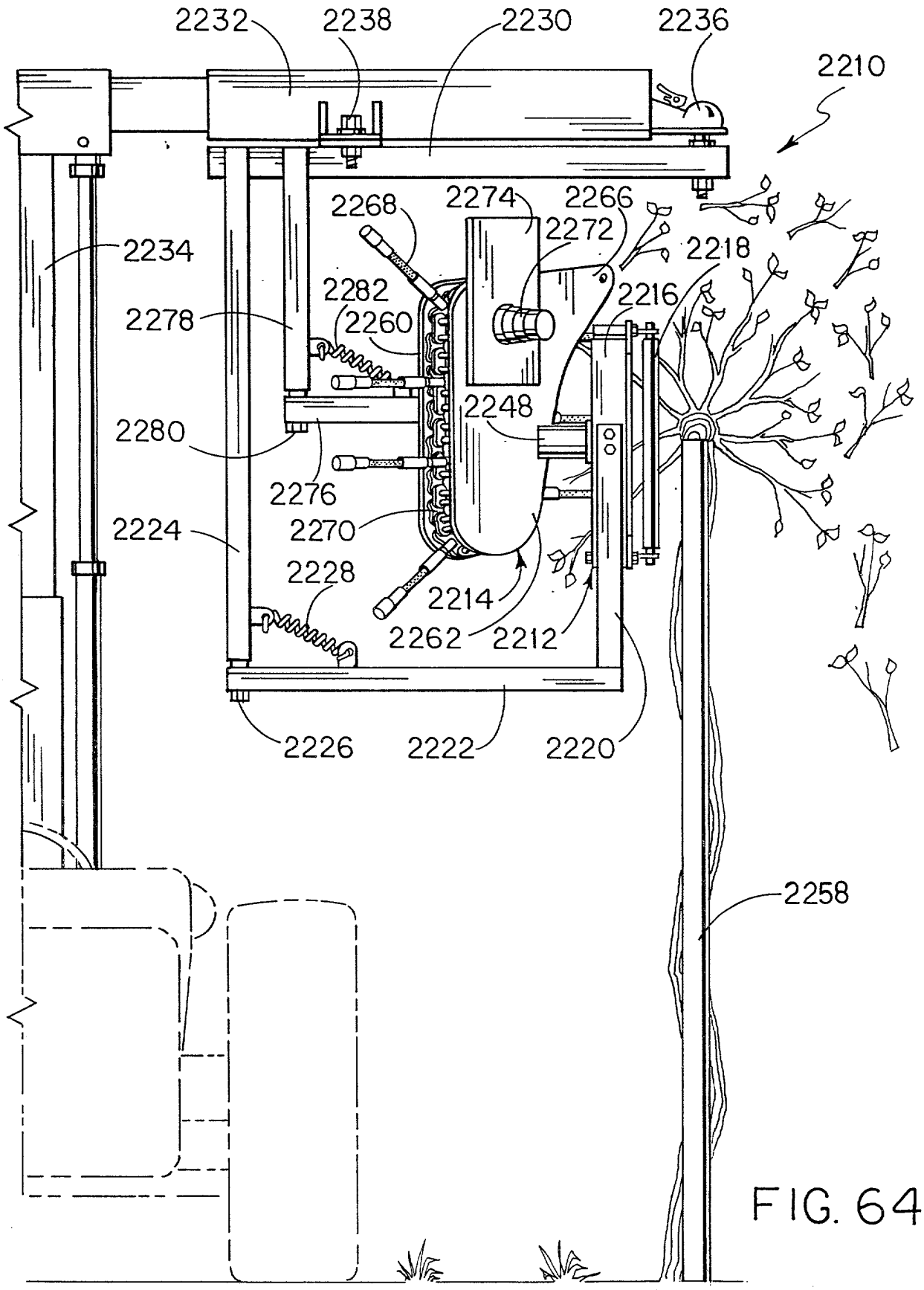
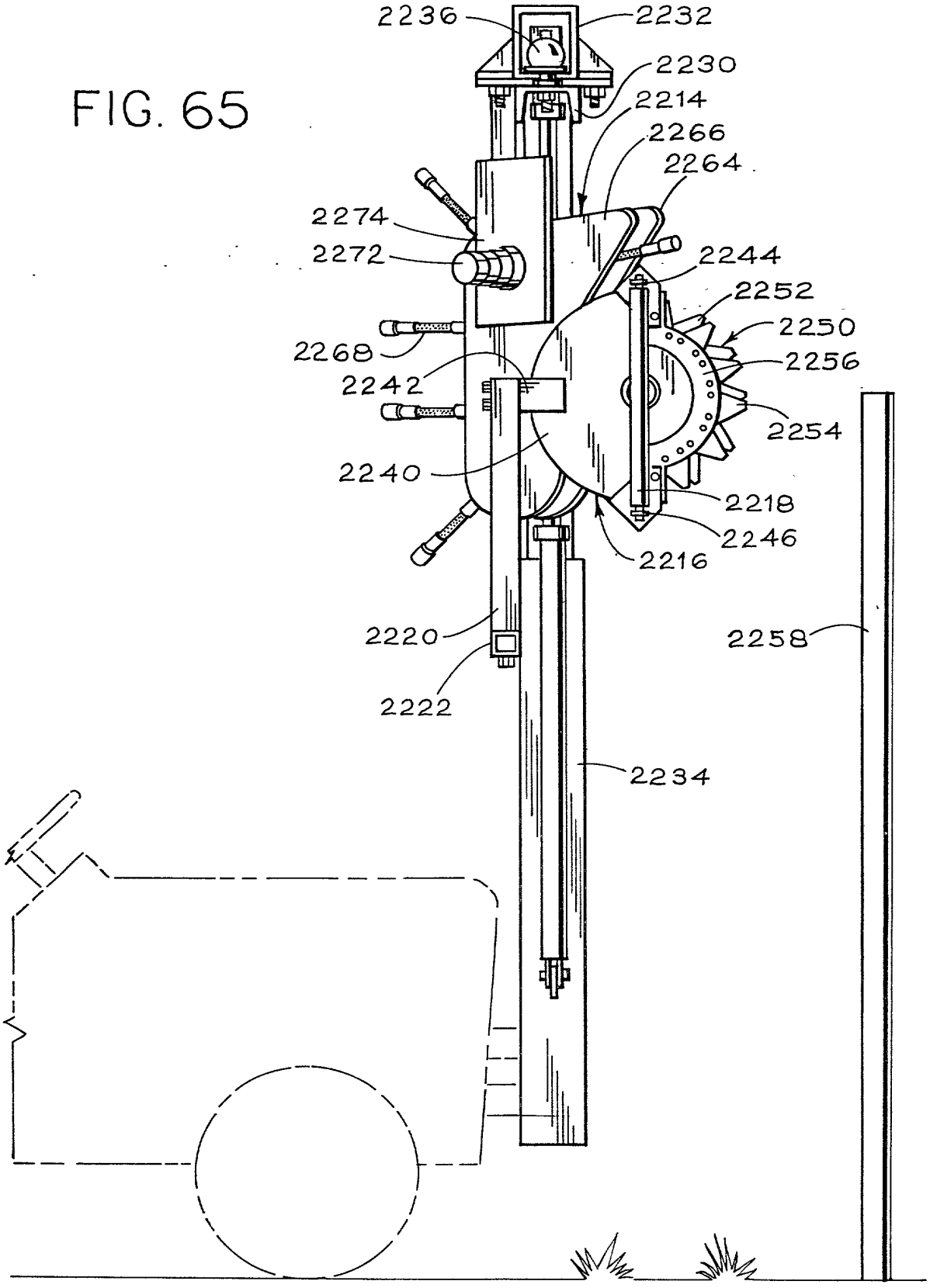

2232
2238
2230
2236
2210
2268
2274
2266
2272
2218
2234
2282
2216
2278
2260
2248
2280
2276
2224
2270
2228
2214
2262
2212
2226
2222
2220
2258

FIG. 64

FIG. 65


2236
2232
2230
2214
2266
2264
2274
2272
2244
2252
2250
2256
2268
2242
2254
2240
2218
2246
2216
2220
2258
2222
2234

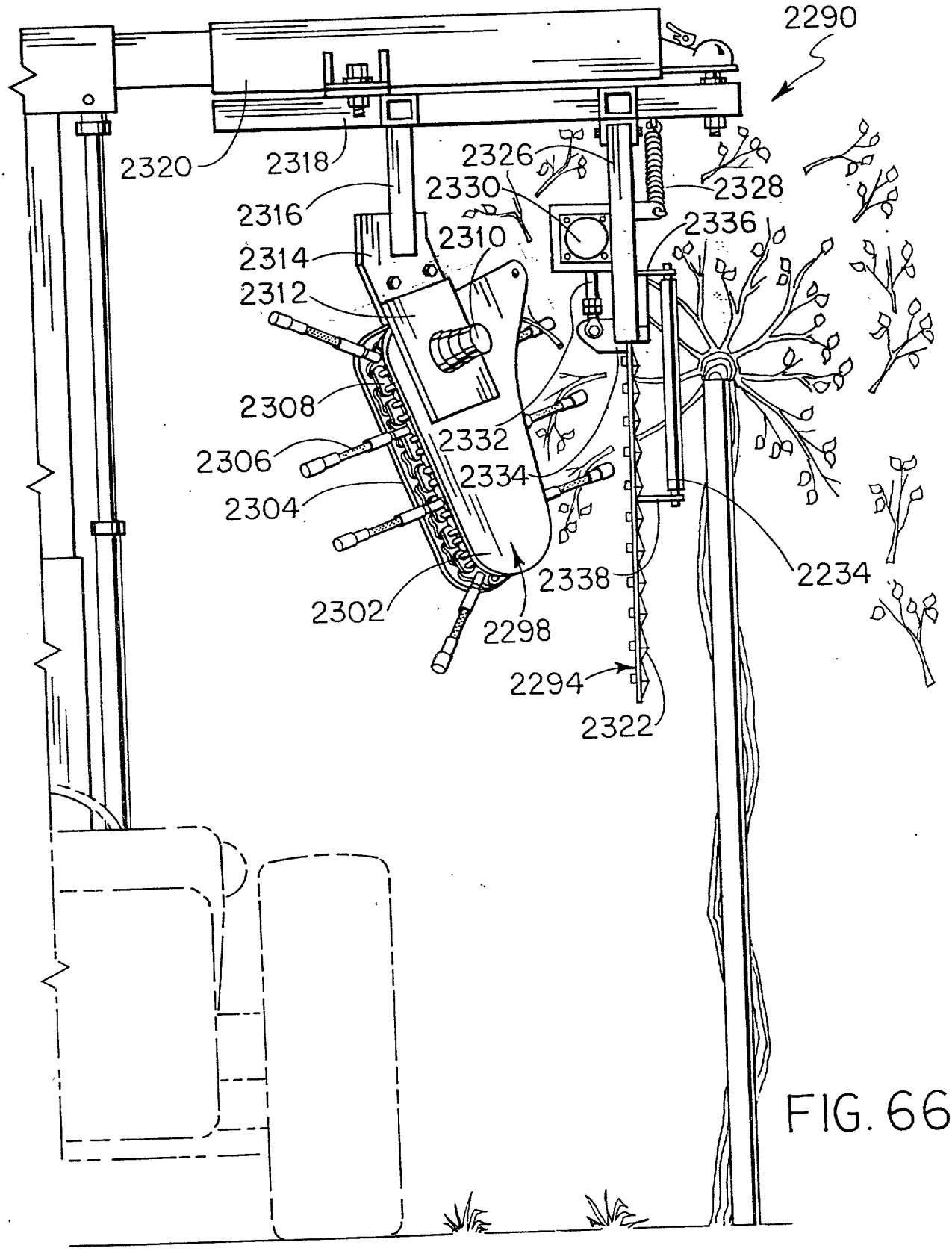

2290
2320
2318
2326
2330
2328
2316
2336
2310
2314
2312
2308
2332
2306
2334
2304
2234
2338
2302
2298
2294
2322

FIG. 66

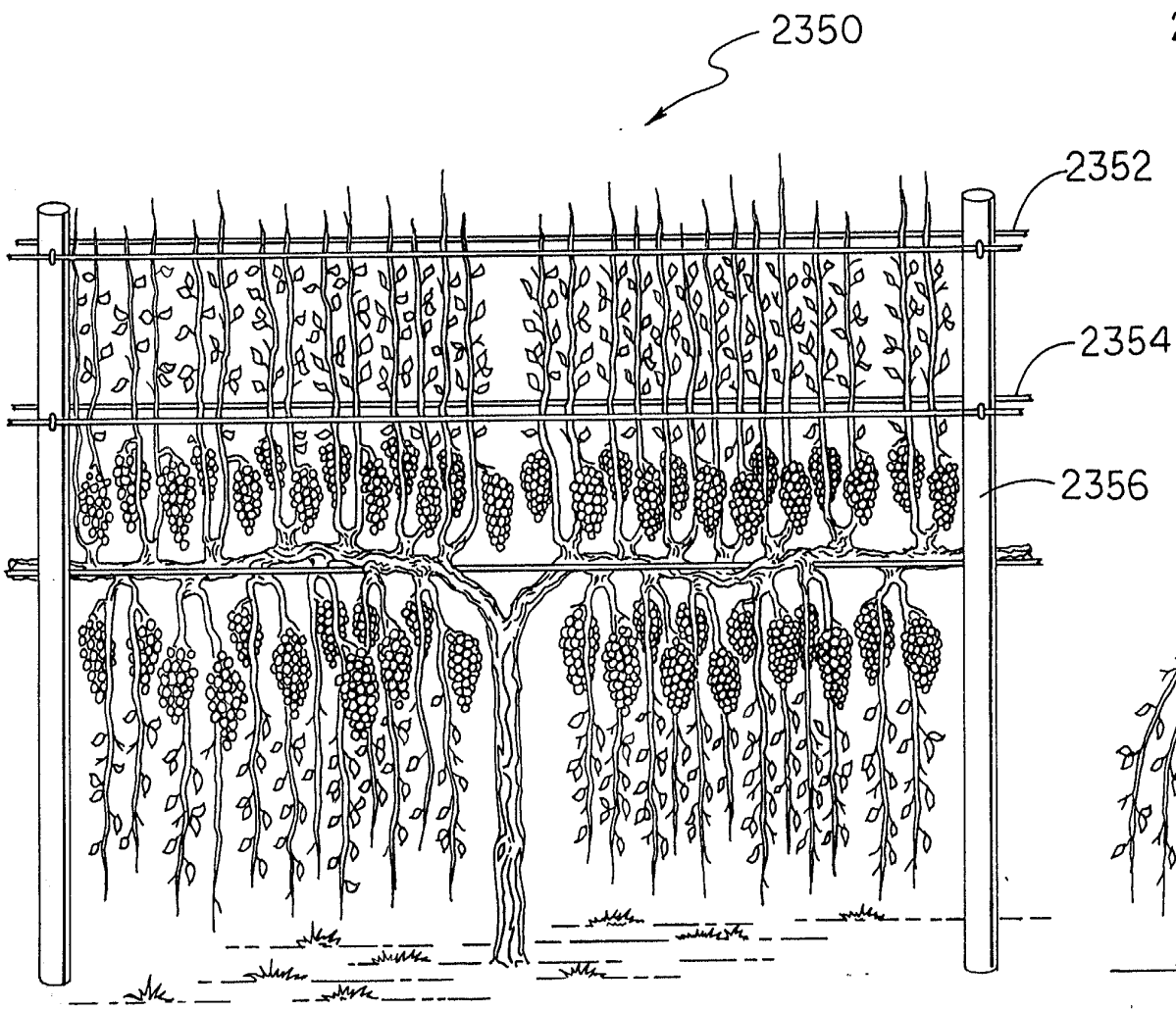


FIG. 67

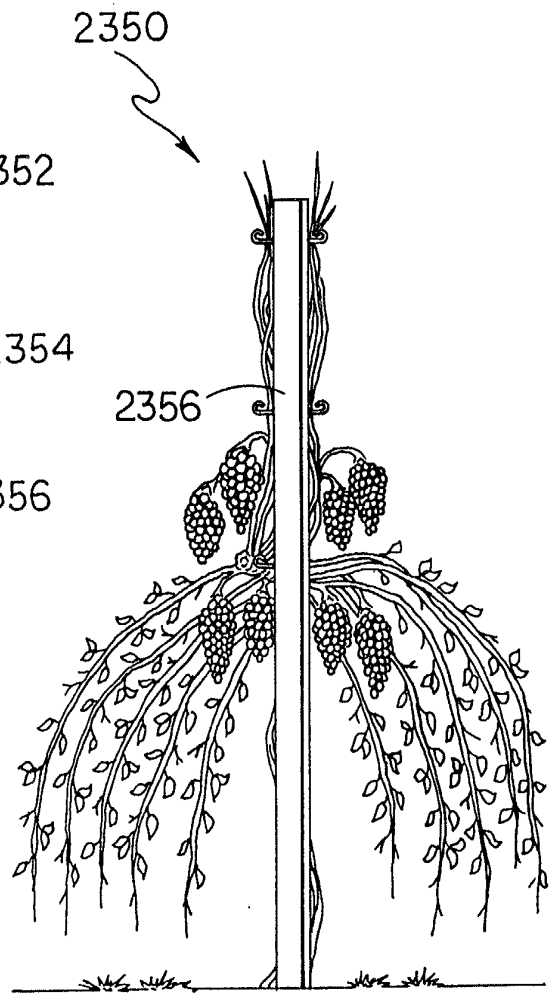


FIG. 68

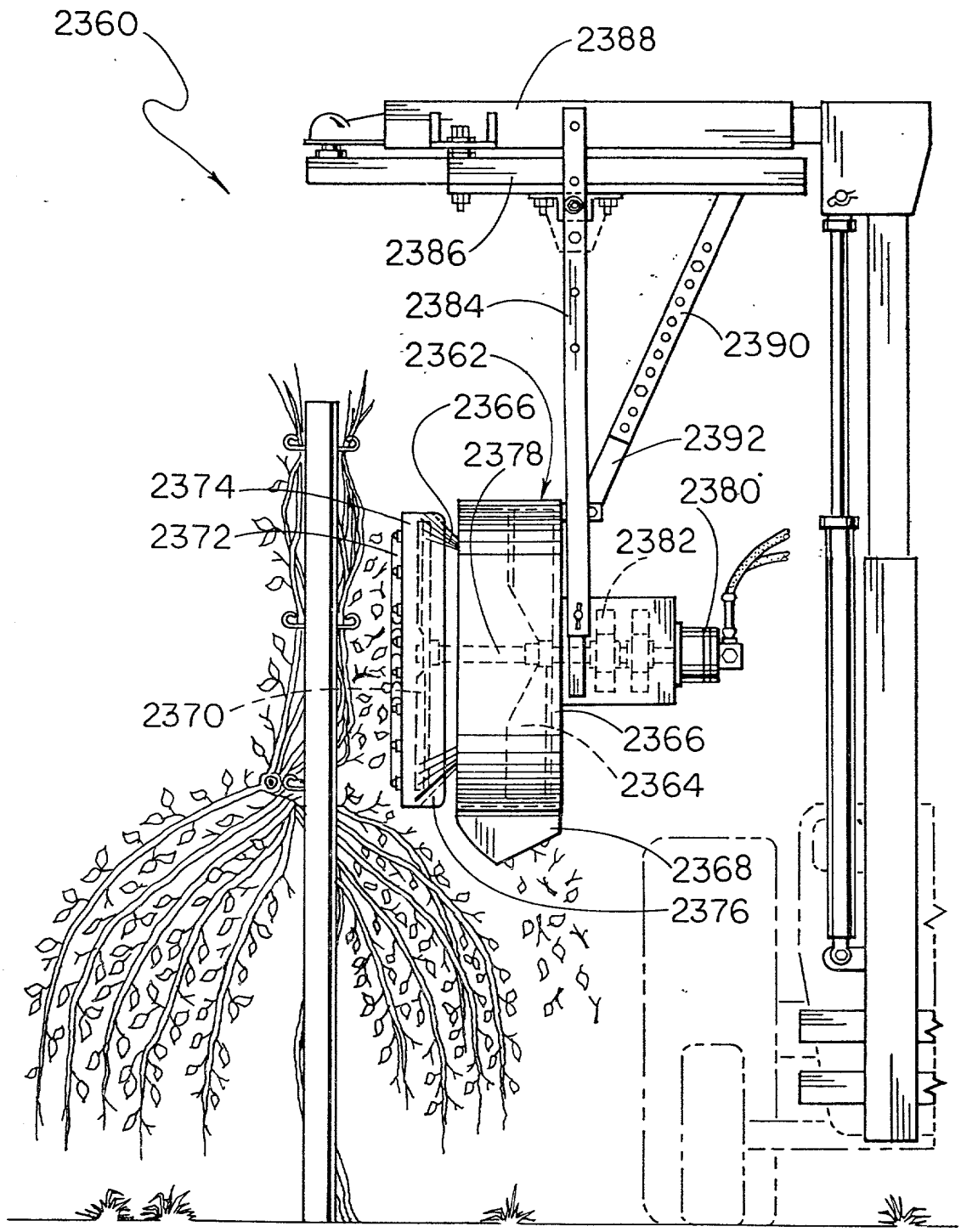

2360
2388
2386
2384
2390
2362
2366
2392
2378
2374
2380
2372
2382
2370
2366
2364
2368
2376

FIG. 69

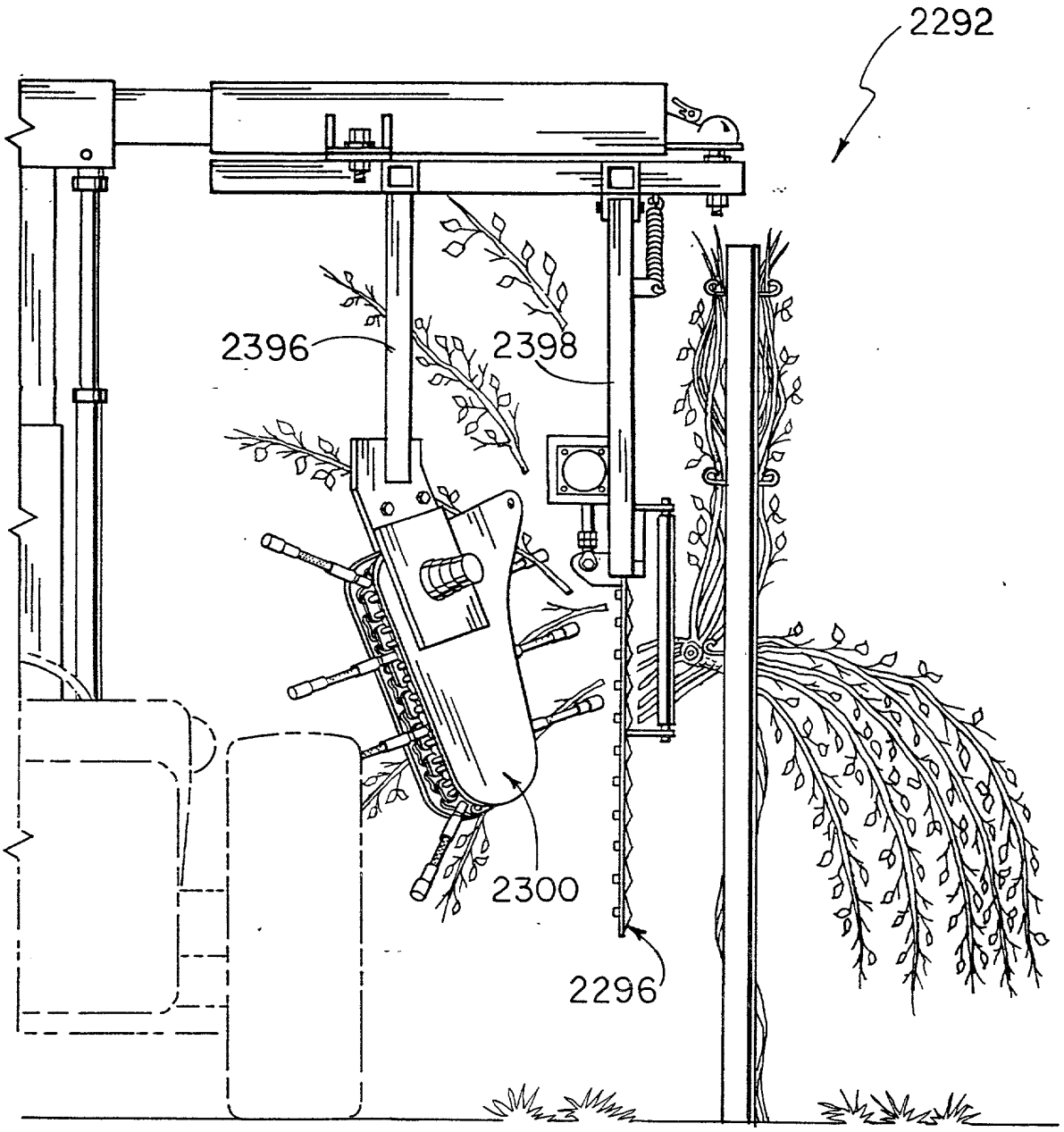


FIG. 70

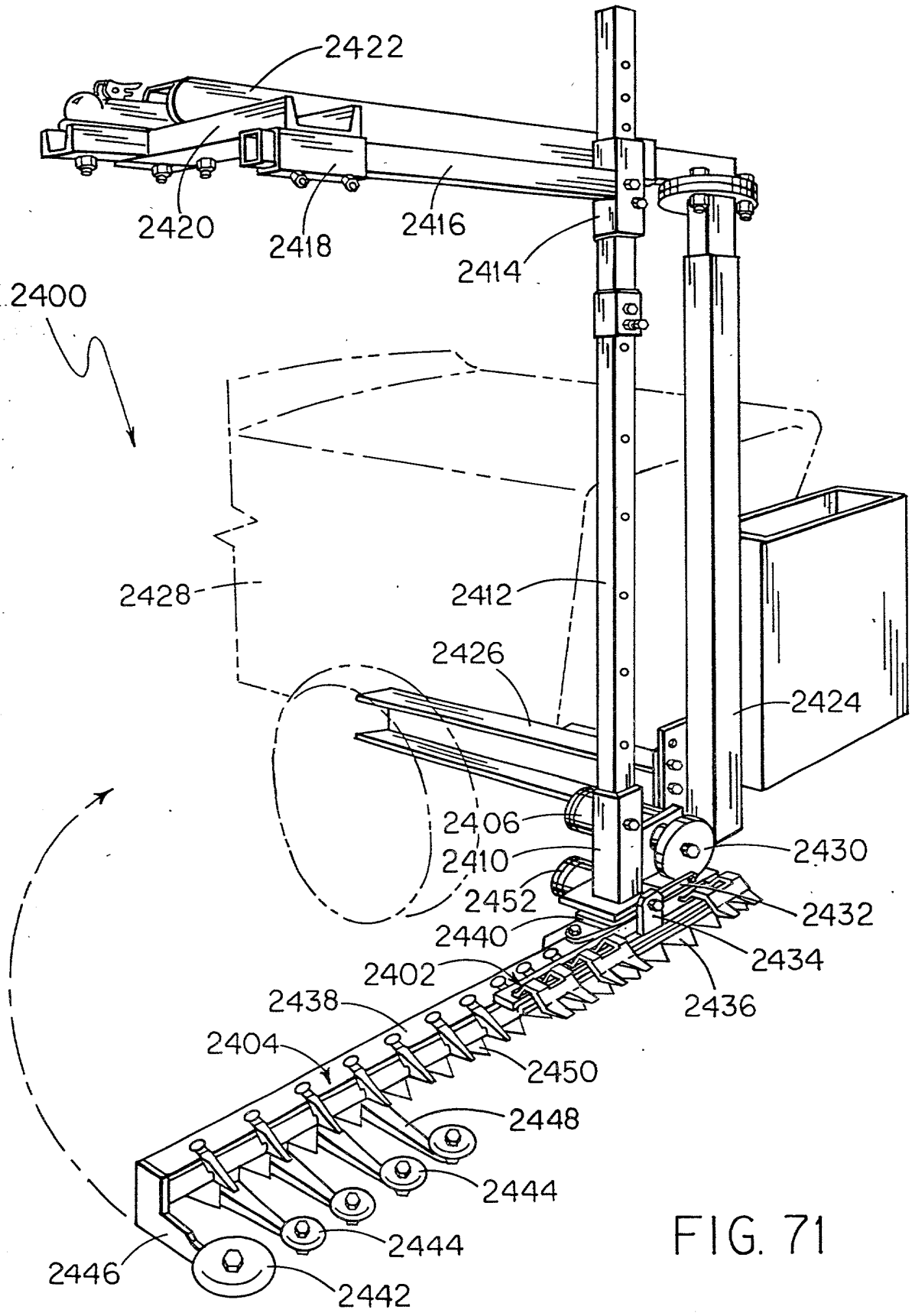

2422
2420
2418
2416
2414
2400
2428
2412
2426
2424
2406
2410
2452
2430
2432
2440
2434
2402
2438
2436
2404
2450
2448
2444
2444
2446
2442

FIG. 71

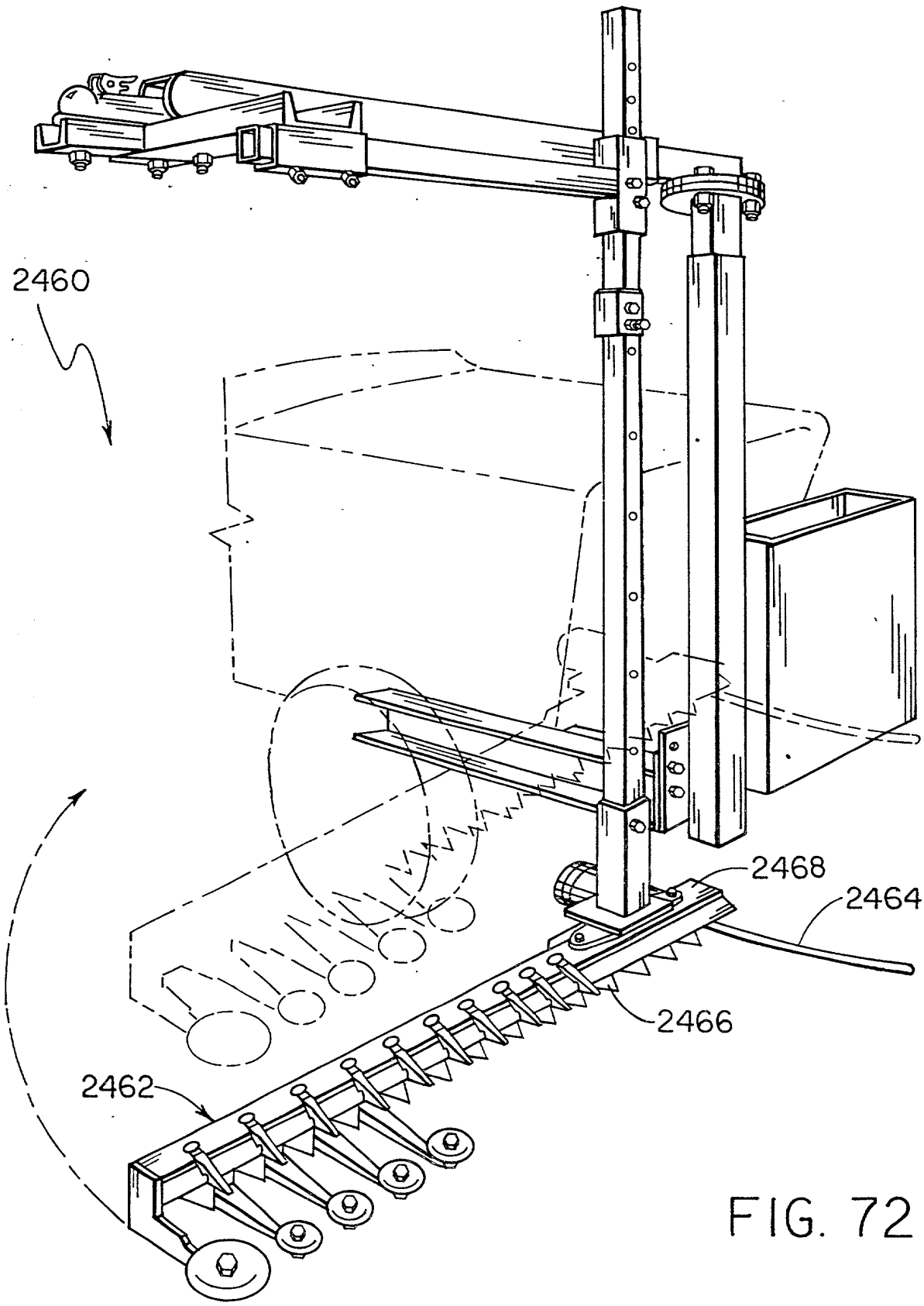
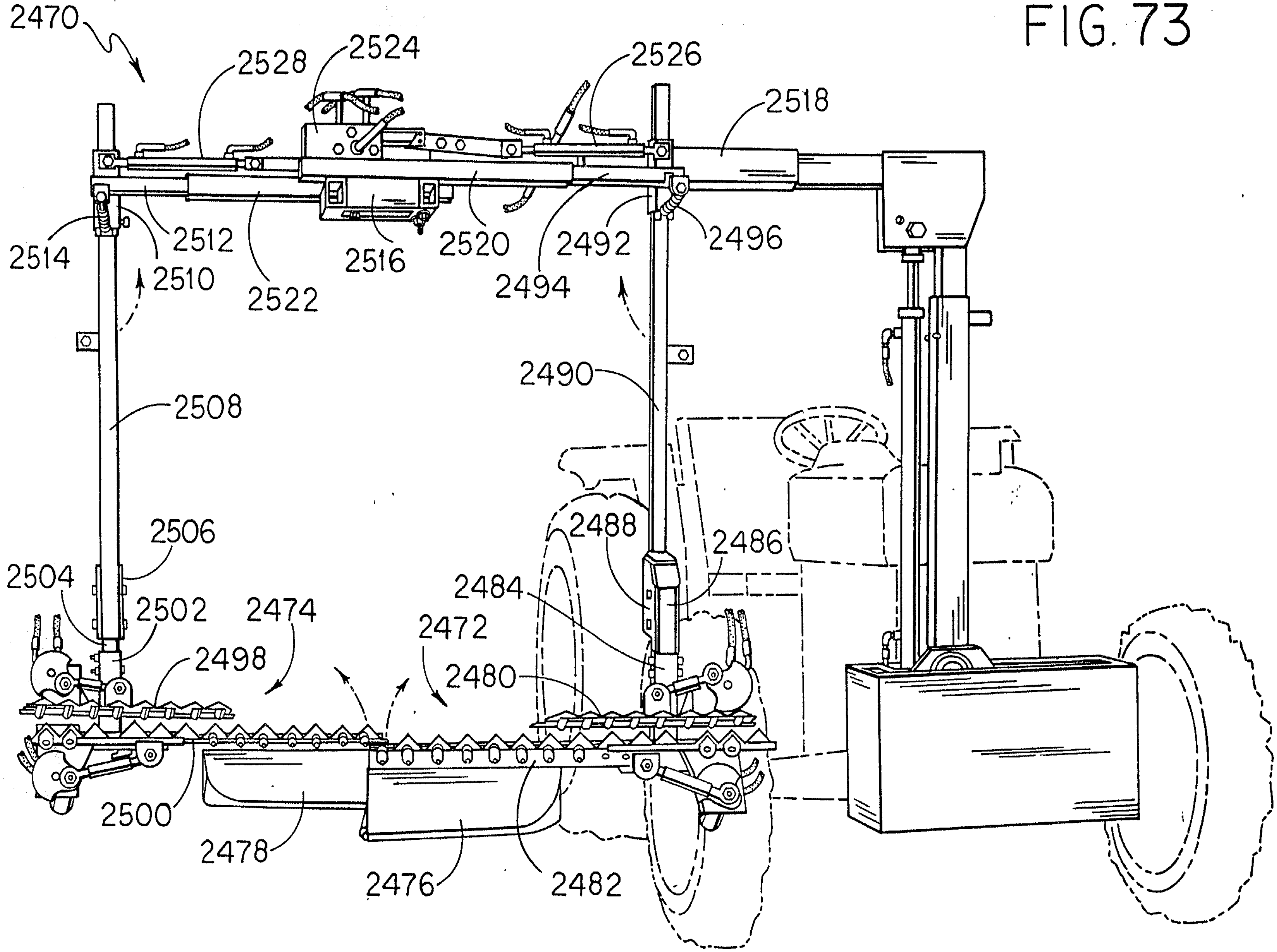


FIG. 72

FIG. 73



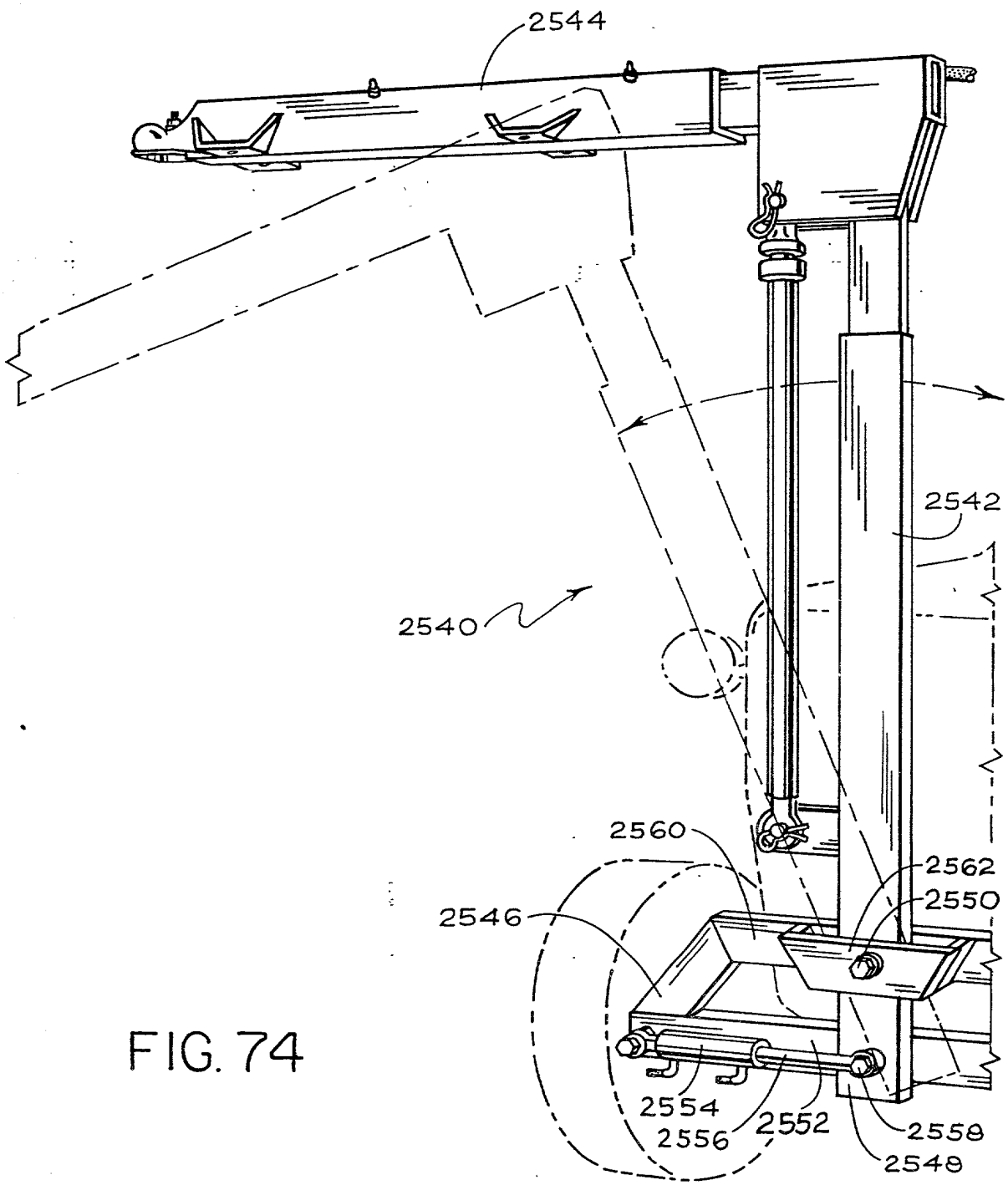
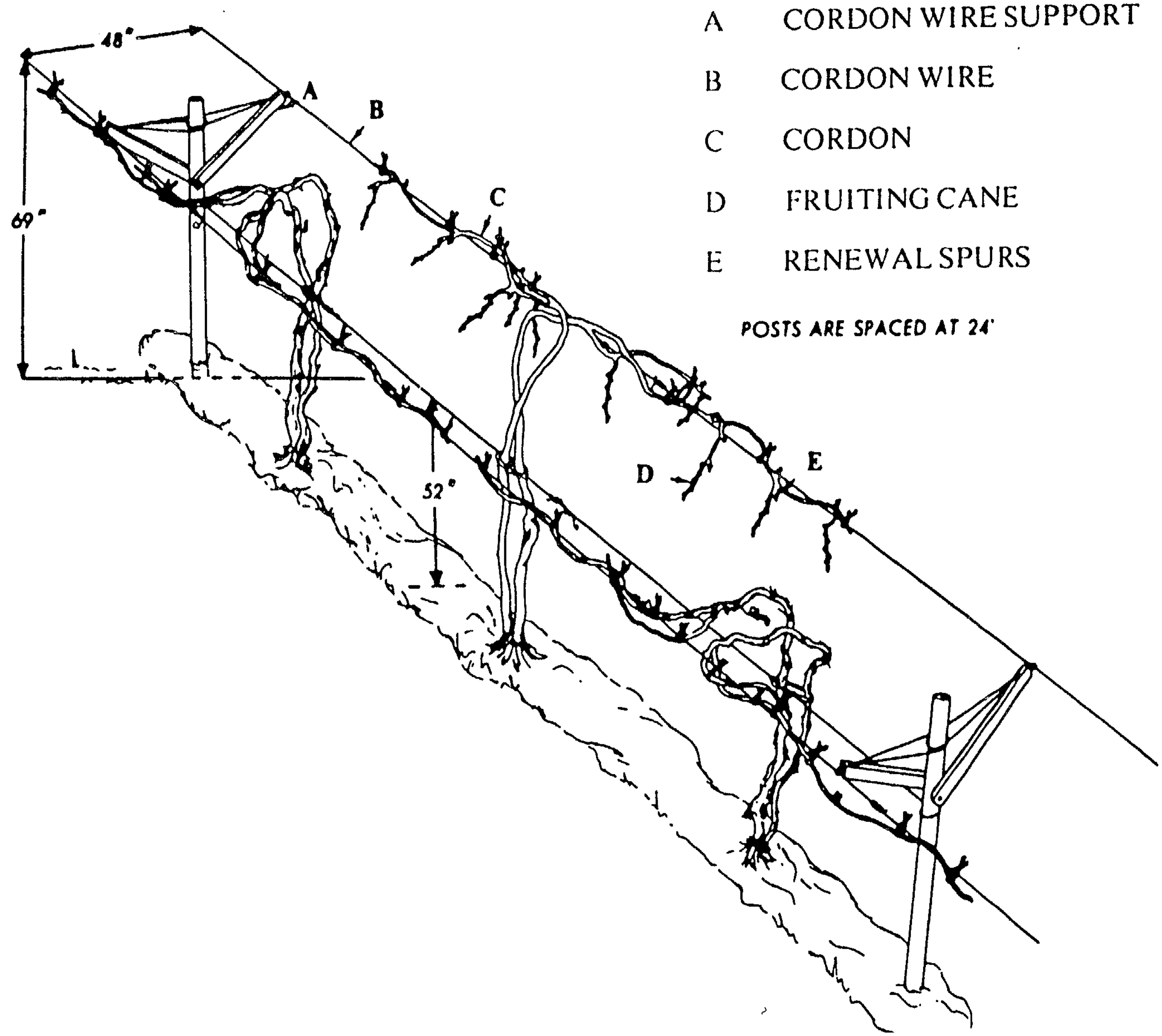


FIG. 74



A CORDON WIRE SUPPORT

B CORDON WIRE

C CORDON

D FRUITING CANE

E RENEWAL SPURS

POSTS ARE SPACED AT 24'

FIG. 75

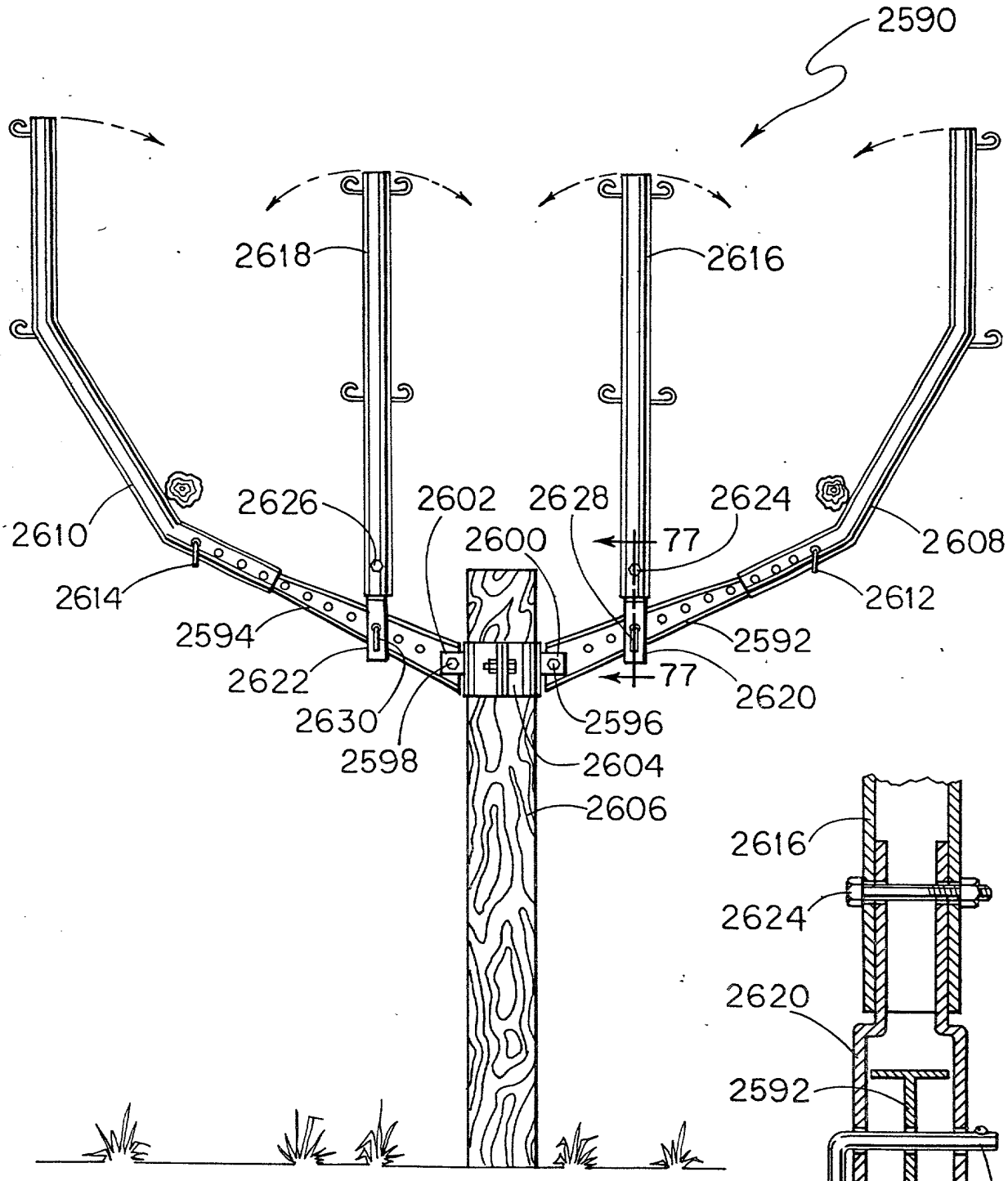

2590
2618
2616
2610
2626
2602
2628
2624
2608
2600
77
2614
2594
2592
2612
2622
77
2620
2630
2596
2598
2604
2606

FIG. 76

2616
2624
2620
2592
2628

FIG. 77

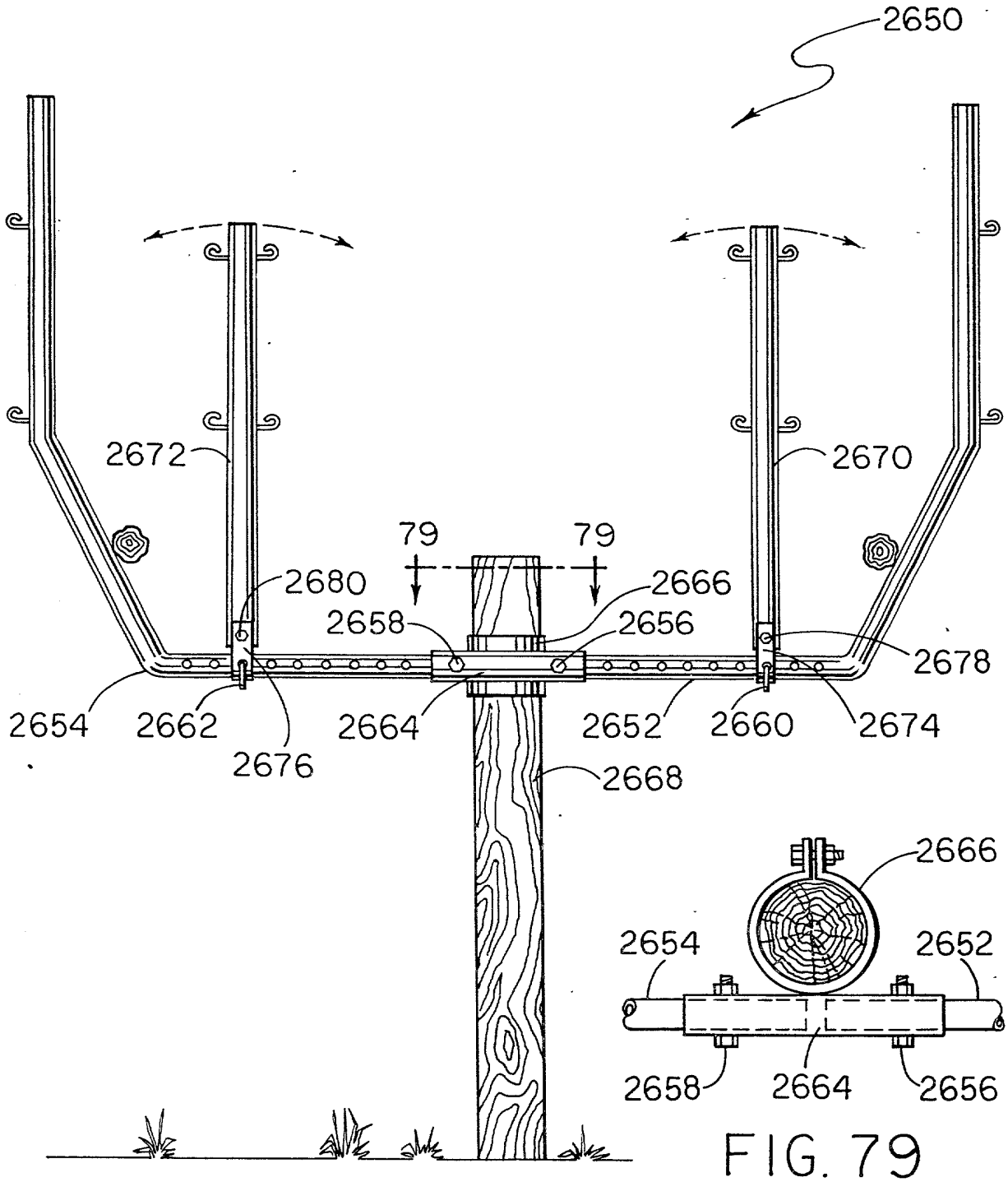

2650
2672
2670
79
79
2680
2666
2658
2656
2678
2654
2662
2664
2652
2660
2674
2676
2668

FIG. 78

2666
2654
2652
2658
2664
2656

FIG. 79

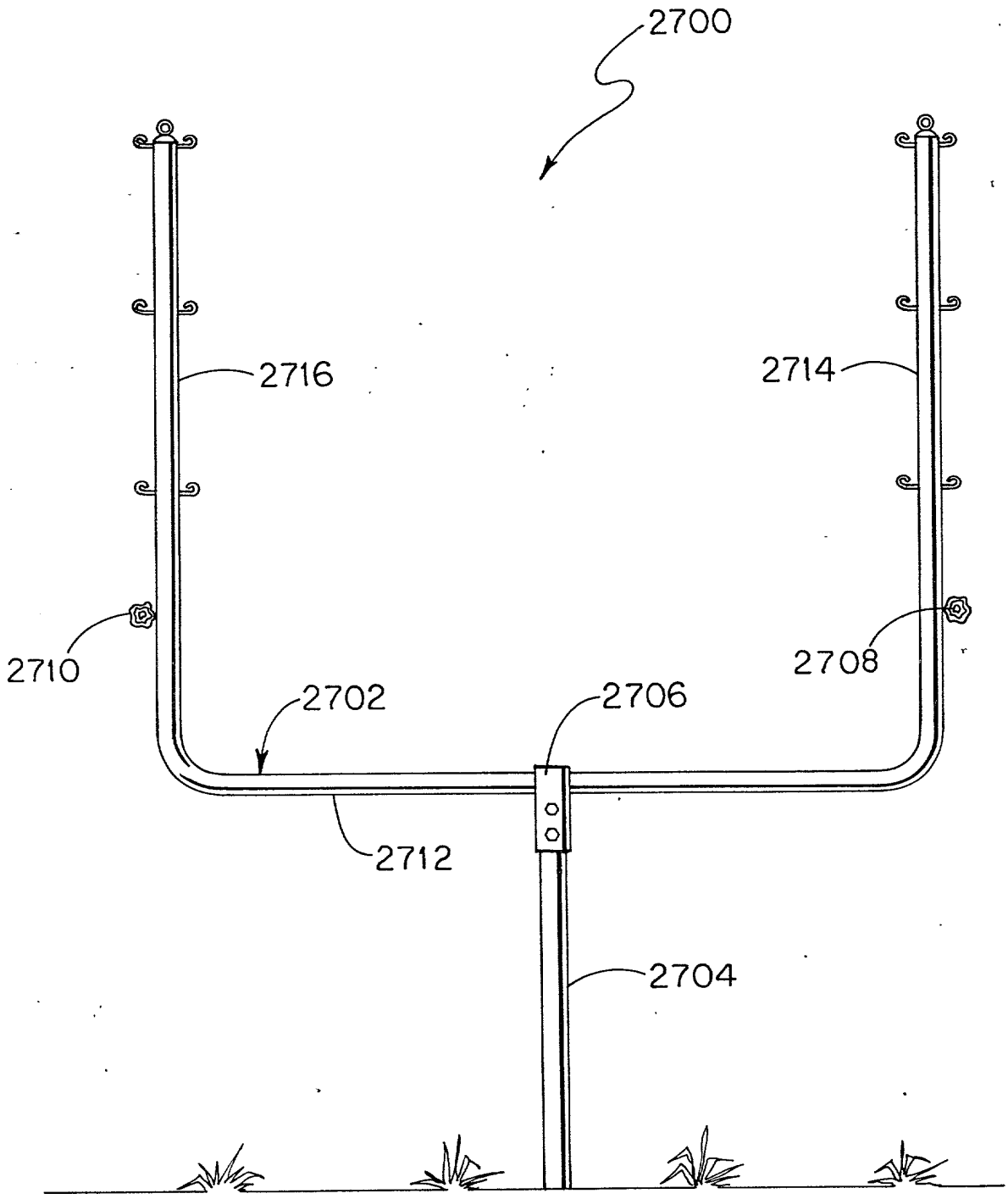


FIG. 80

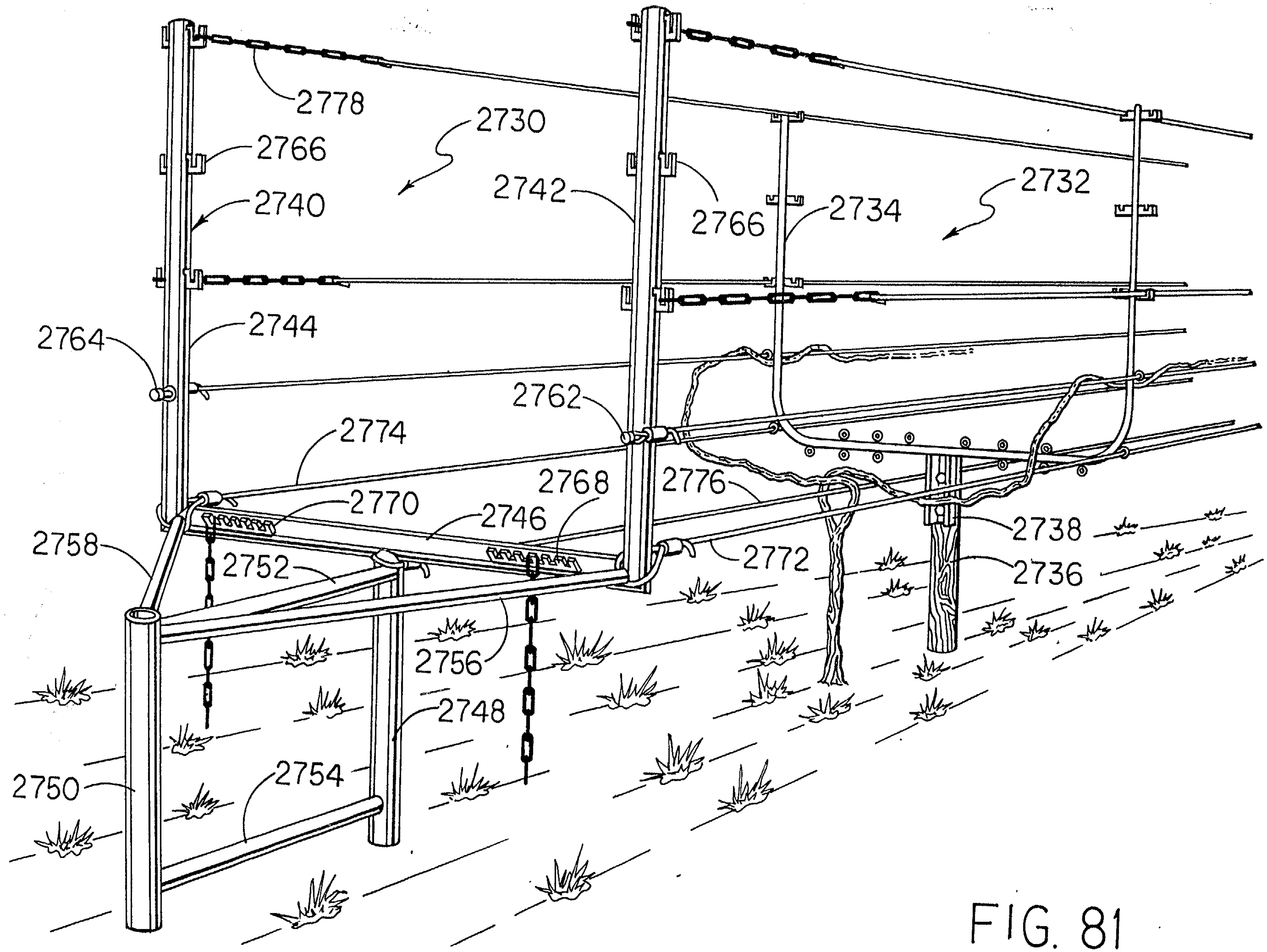
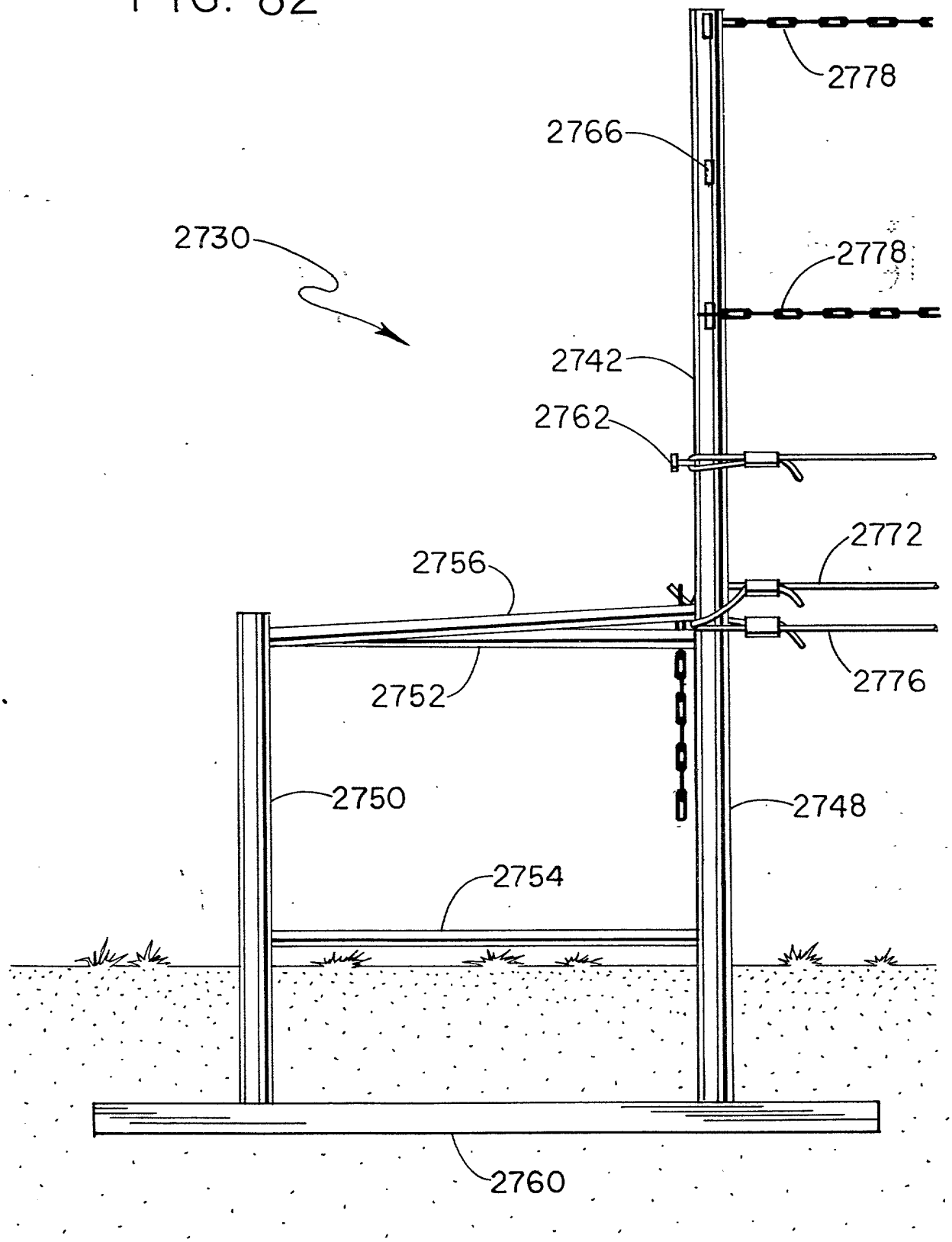

2778
2766
2740
2730
2742
2766
2734
2732
2764
2744
2762
2774
2768
2776
2770
2746
2738
2758
2752
2772
2736
2756
2748
2750
2754

FIG. 81

FIG. 82


2778
2766
2730
2778
2742
2762
2772
2756
2776
2752
2750
2748
2754
2760

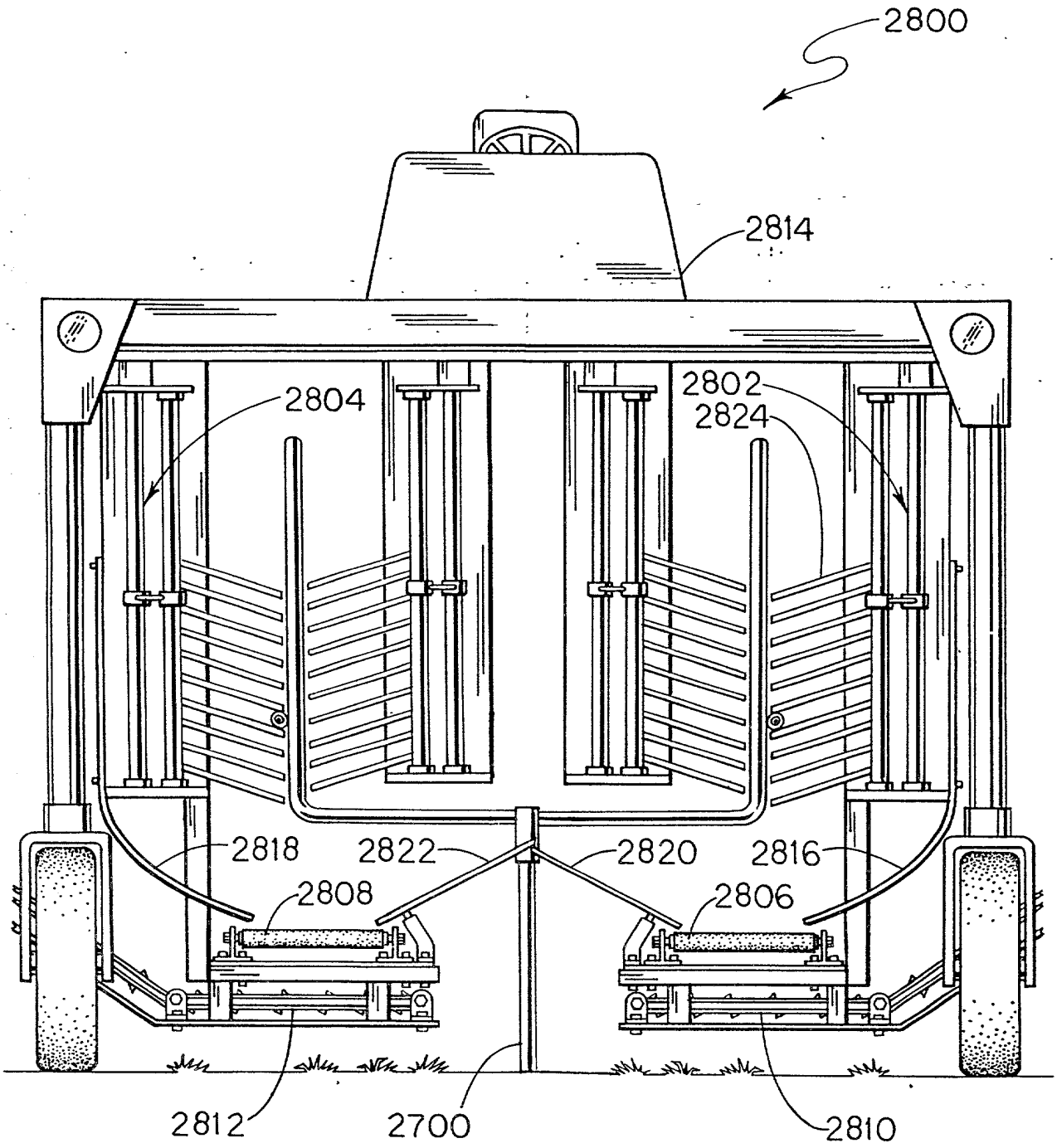

2800
2814
2804
2802
2824
2818
2822
2820
2816
2808
2806
2812
2700
2810

FIG. 83

FIG. 84

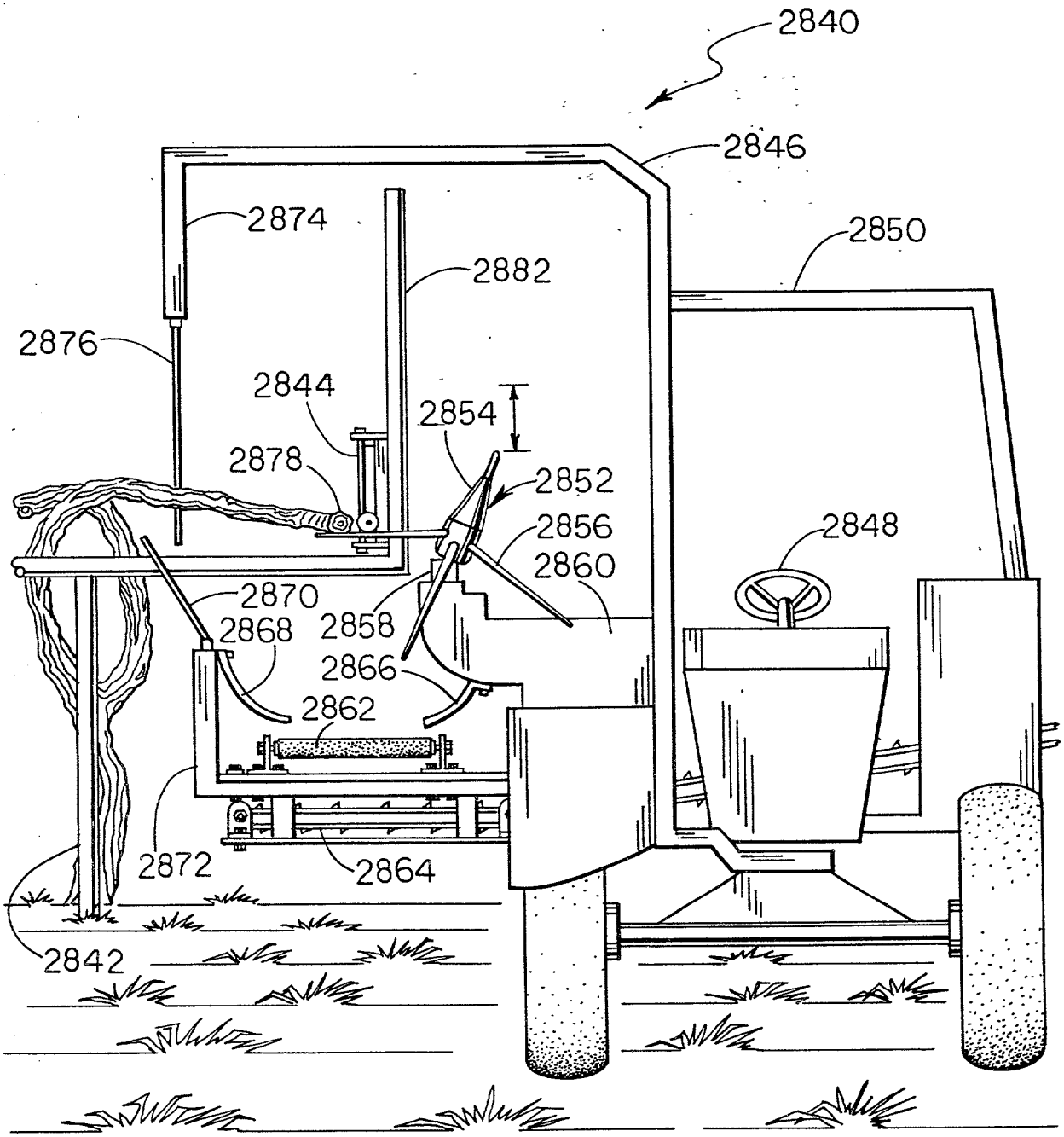

2840
2846
2874
2850
2882
2876
2844
2854
2878
2852
2856
2848
2860
2870
2858
2868
2866
2862
2872
2864
2842

FIG. 84A

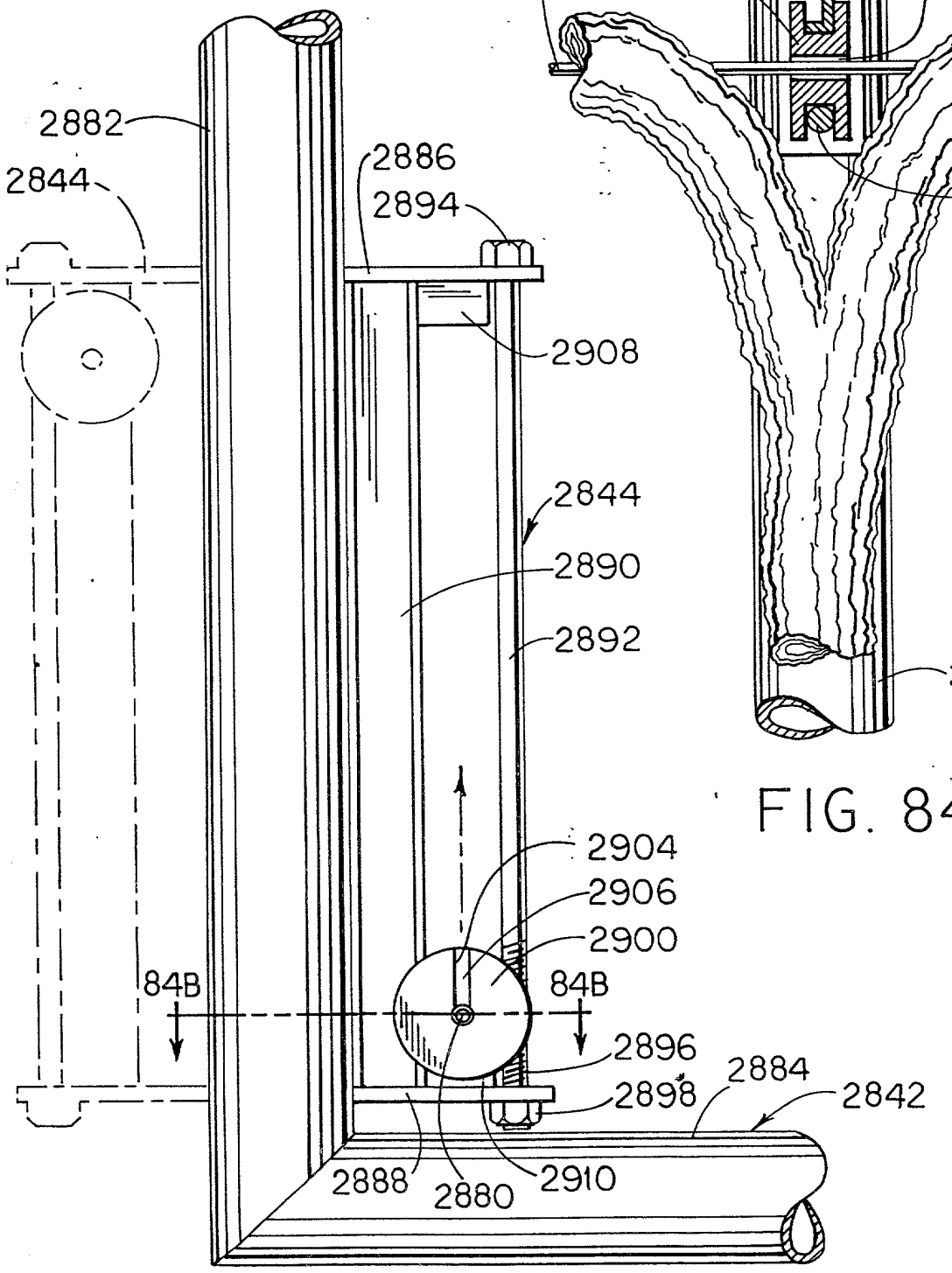


FIG. 84B

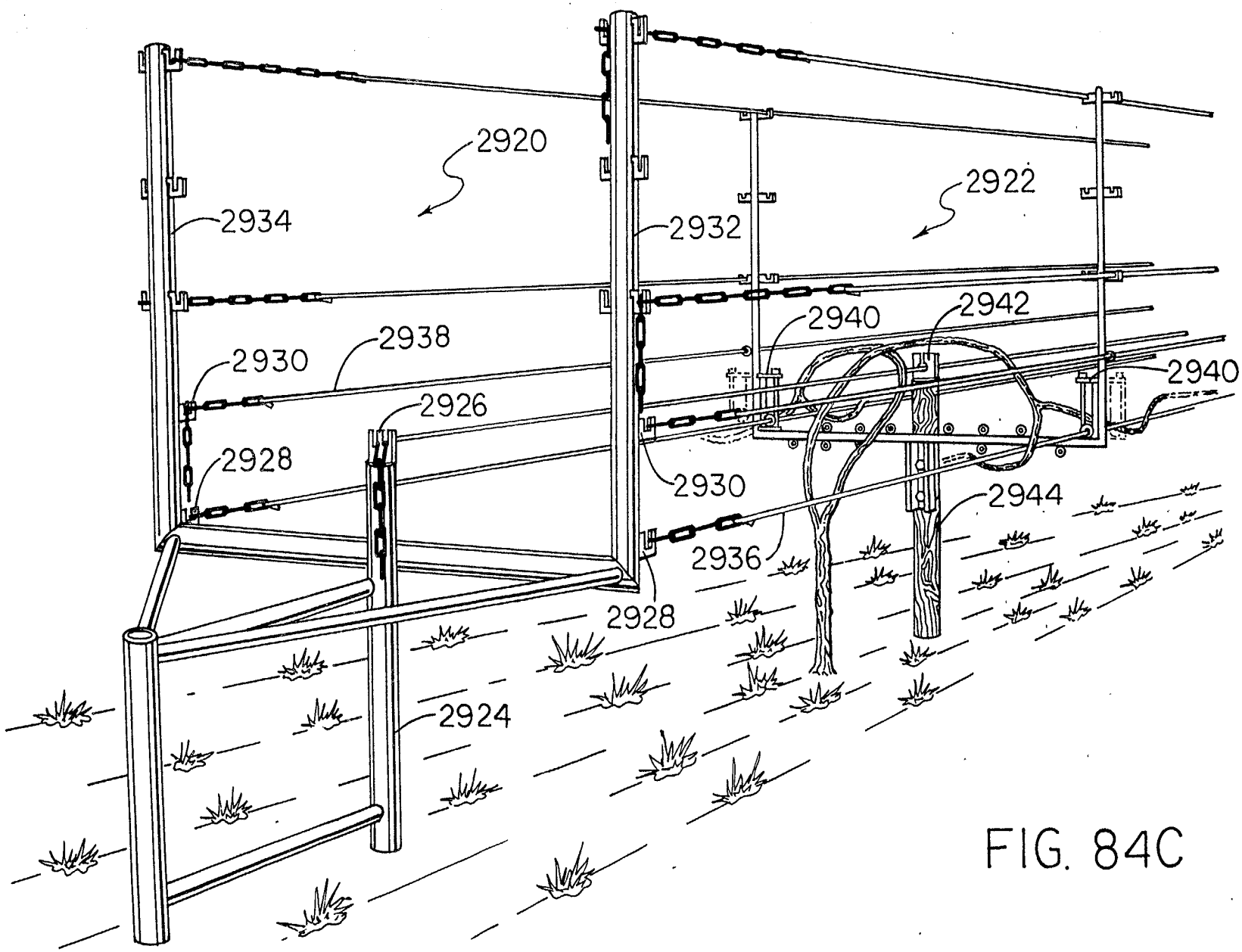

2920
2922
2934
2932
2940
2942
2938
2930
2940
2926
2928
2930
2944
2936
2928
2924

FIG. 84C

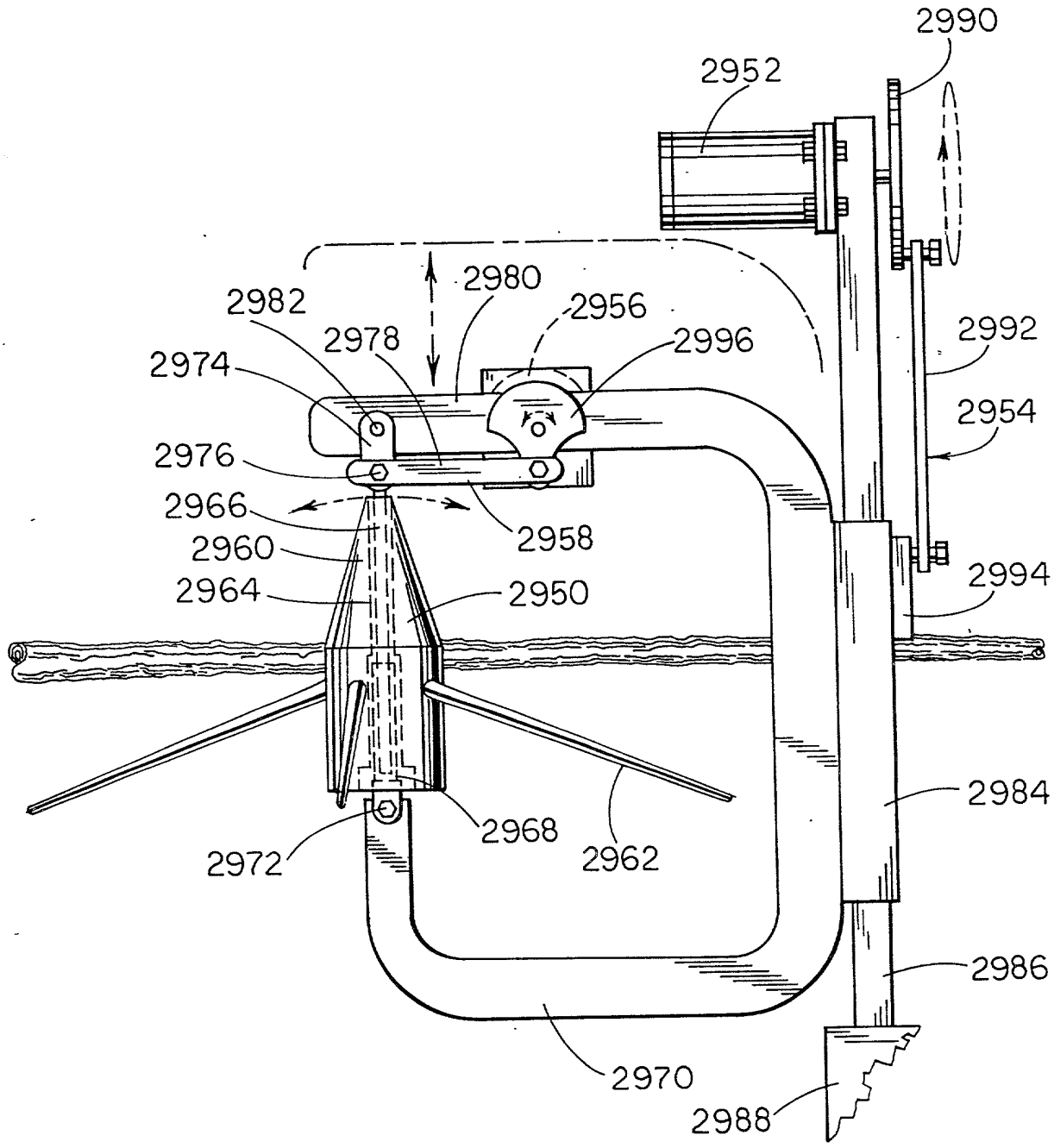

2990
2952
2980
2982
2956
2978
2996
2992
2974
2954
2976
2966
2958
2960
2994
2964
2950
2984
2968
2962
2972
2986
2970
2988

FIG. 84D

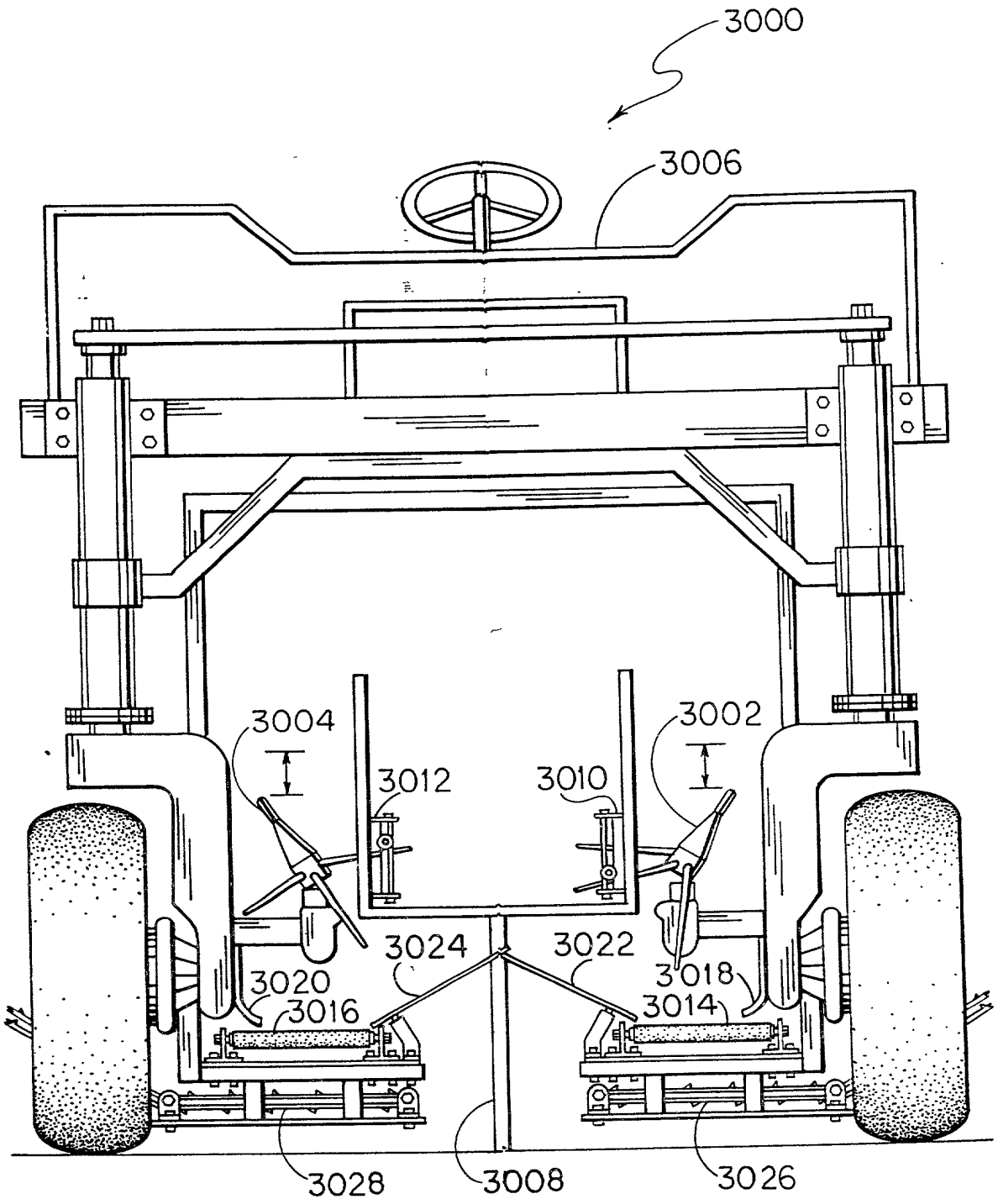

3000
3006
3004
3012
3010
3002
3024
3022
3020
3016
3018
3014
3028
3008
3026

FIG. 85

I. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS LABRUSCANA (and other grapes with drooping growth habits) ON SINGLE CURTAIN TRELLIS

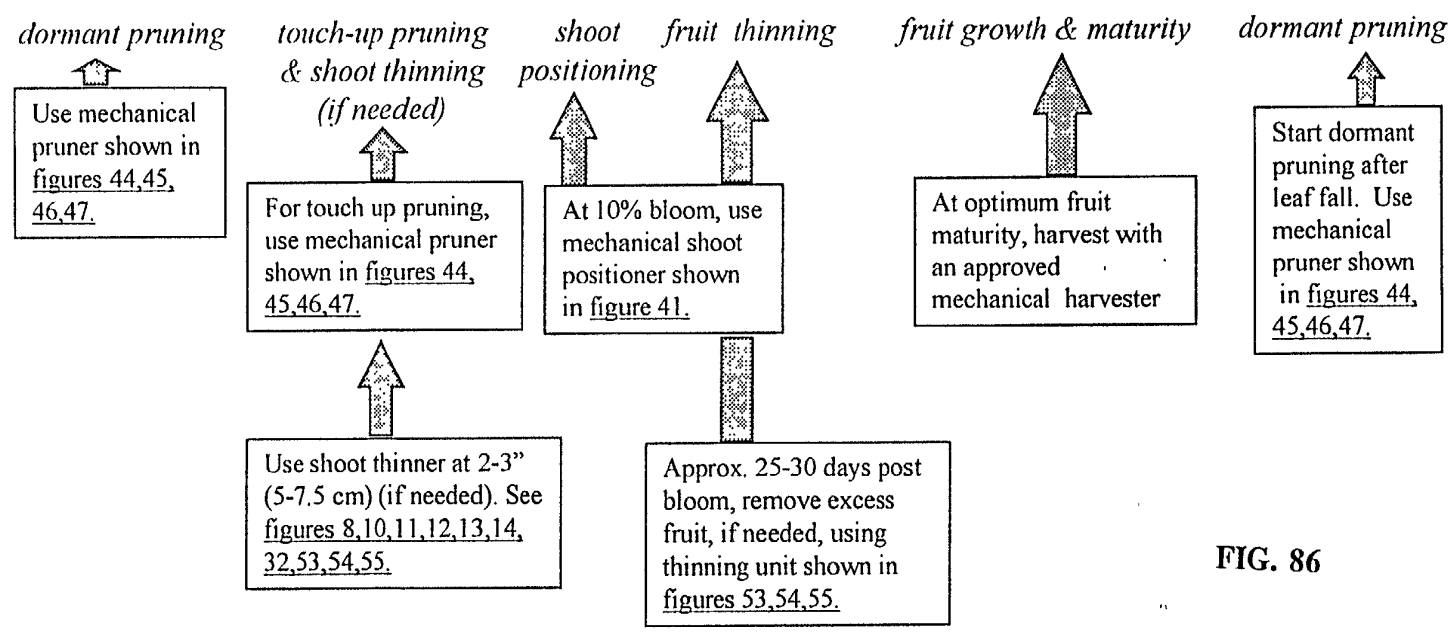


FIG. 86

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

II. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS LABRUSCANA (and other grapes with drooping growth habits) ON GDC TRELLIS AND GDC-LIKE CANOPY SYSTEMS

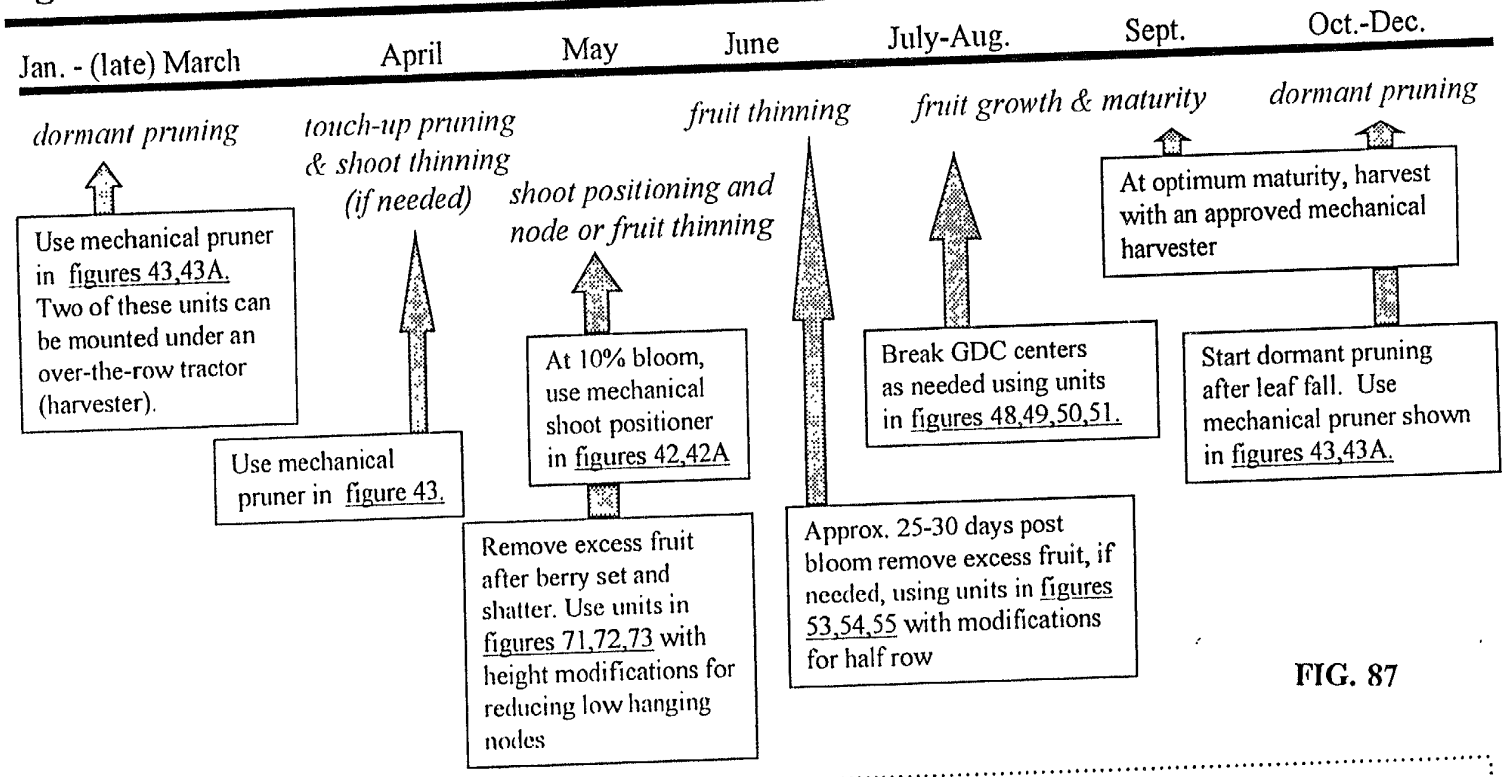


FIG. 87

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

III. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES ON MINIMAL PRUNED VITIS LABRUSCANA (and other grapes with drooping growth habits) ON SINGLE CURTAIN TRELLIS SYSTEMS

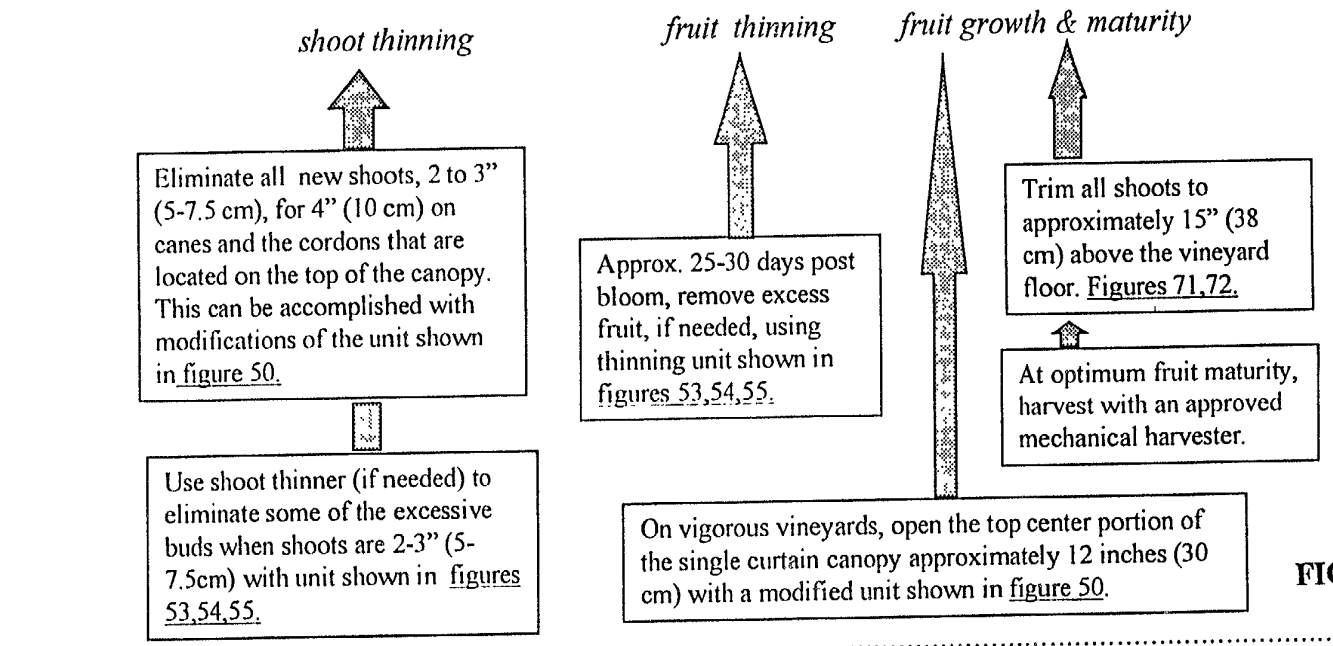


FIG. 88

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

IV. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES ON MINIMAL PRUNED VITIS LABRUSCANA (and other grapes with drooping growth habits) ON GDC TRELLIS SYSTEMS

Jan. - (late) March | April | May | June | July | Aug. | Sept. | Oct.-Dec.

shoot thinning

Shoot thin (if needed) to eliminate some of the excessive buds when shoots are 2-3" (5-7.5cm) with unit in figure 18 and with modifications for half rows to units shown in figures 53,54,55.

fruit thinning

Approx. 25-30 days post bloom, remove excess fruit, if needed, using thinning unit shown in figures 53, 54,55 with modifications for half rows.

At shatter, open centers with units in figures 50,51.

fruit growth & maturity

Clean GDC centers as needed using unit shown in figures 48,49, 50,51.

Trim all shoots to approximately 15" (38cm) above the vineyard floor. Figures 71,72.

At optimum fruit maturity, harvest with an approved mechanical harvester

FIG. 89

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

V. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS PRODUCED ON HIGH WIRE SINGLE CURTAIN TRELLISES

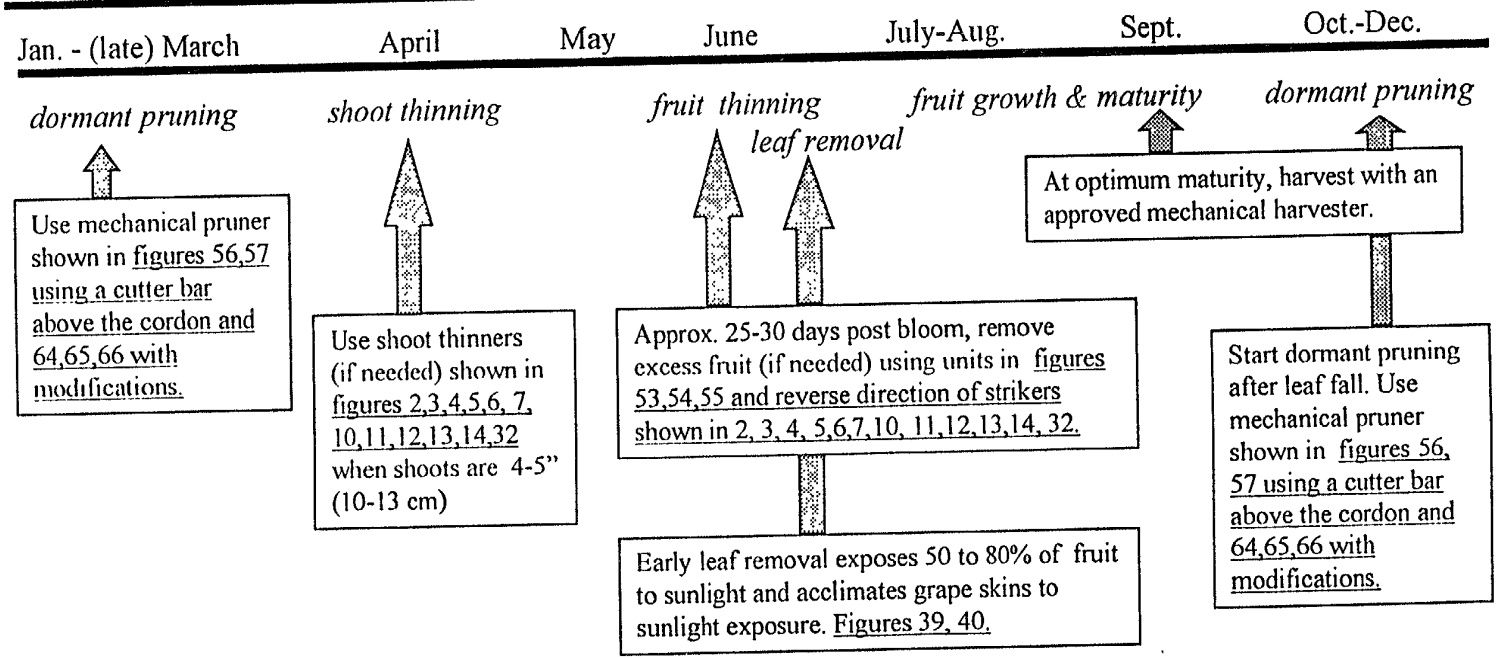


FIG. 90

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

VI. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS PRODUCED ON GDC AND OTHER DIVIDED CANOPY TRELLISES

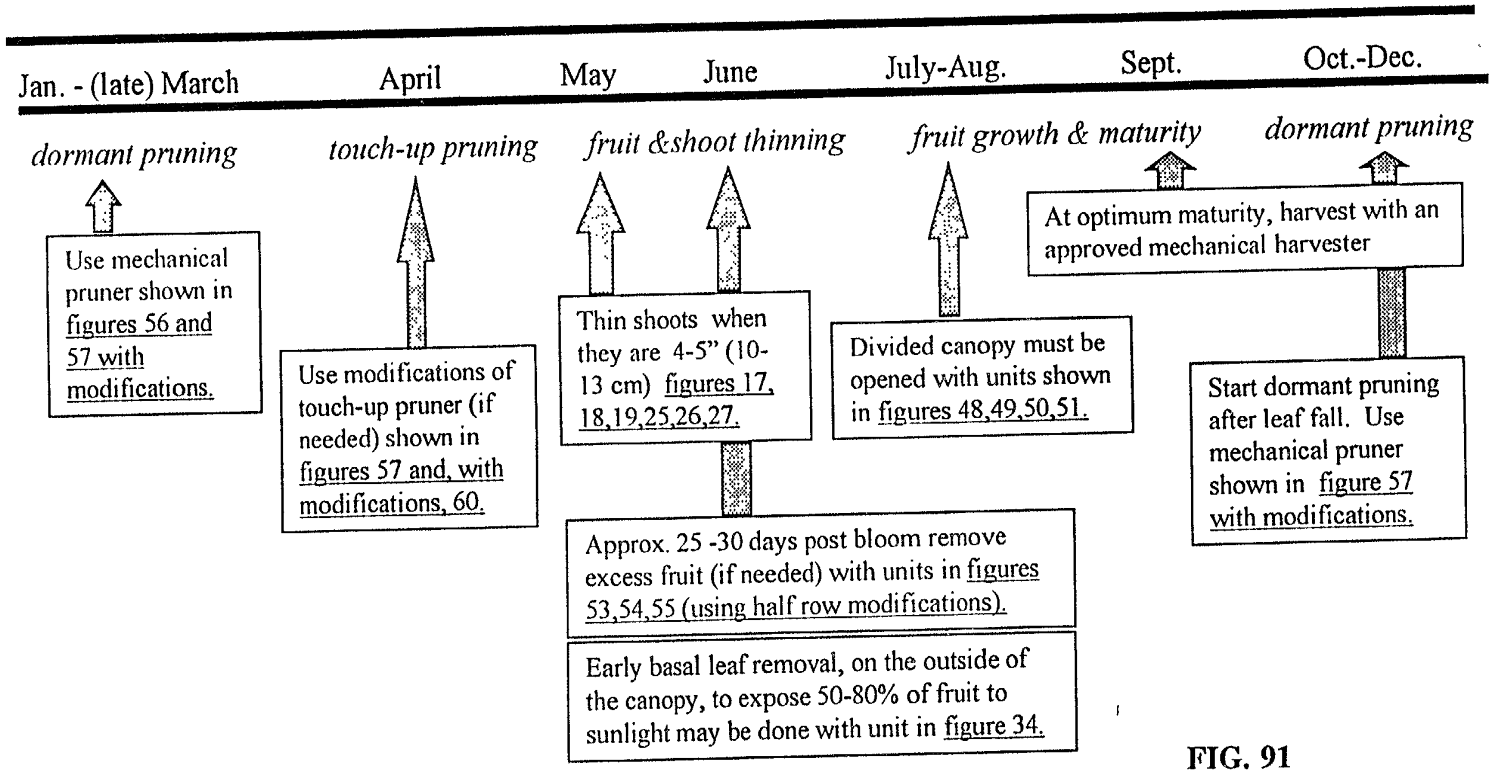


FIG. 91

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

VII. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES IN MINIMAL PRUNED VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS TRAINED TO A HIGH WIRE SINGLE CURTAIN TRELLISING SYSTEM.

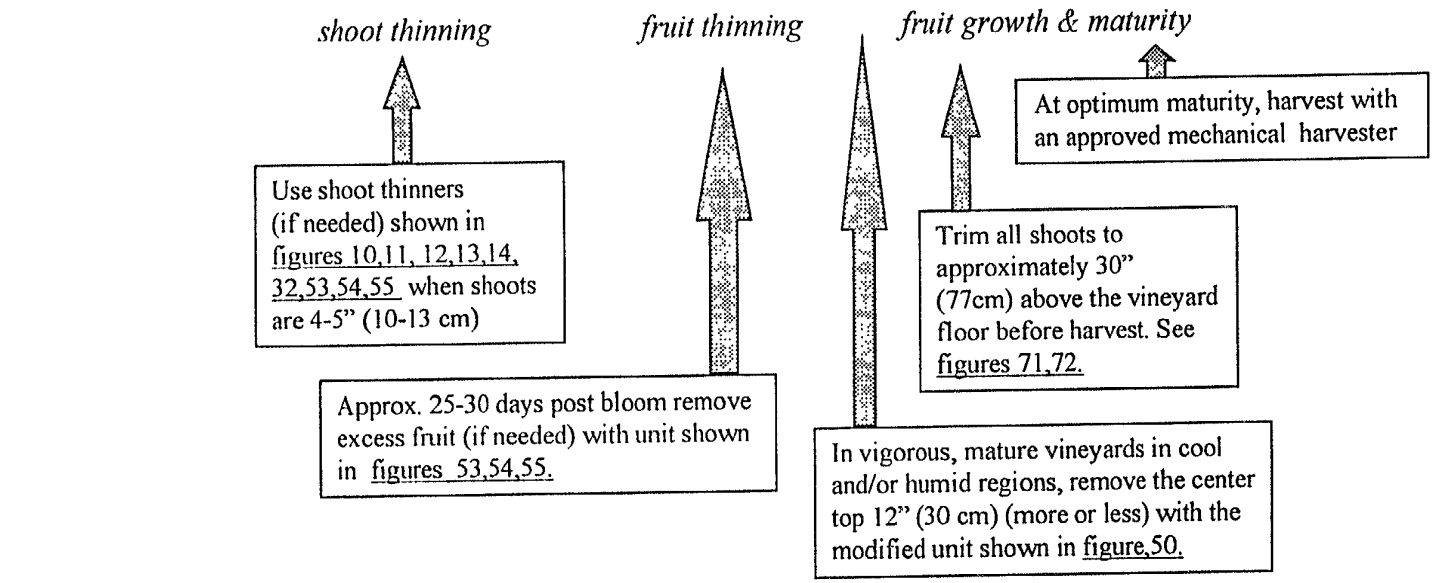


FIG. 92

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

VIII. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES ON MINIMAL PRUNED VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS ON GDC TRELLIS SYSTEMS

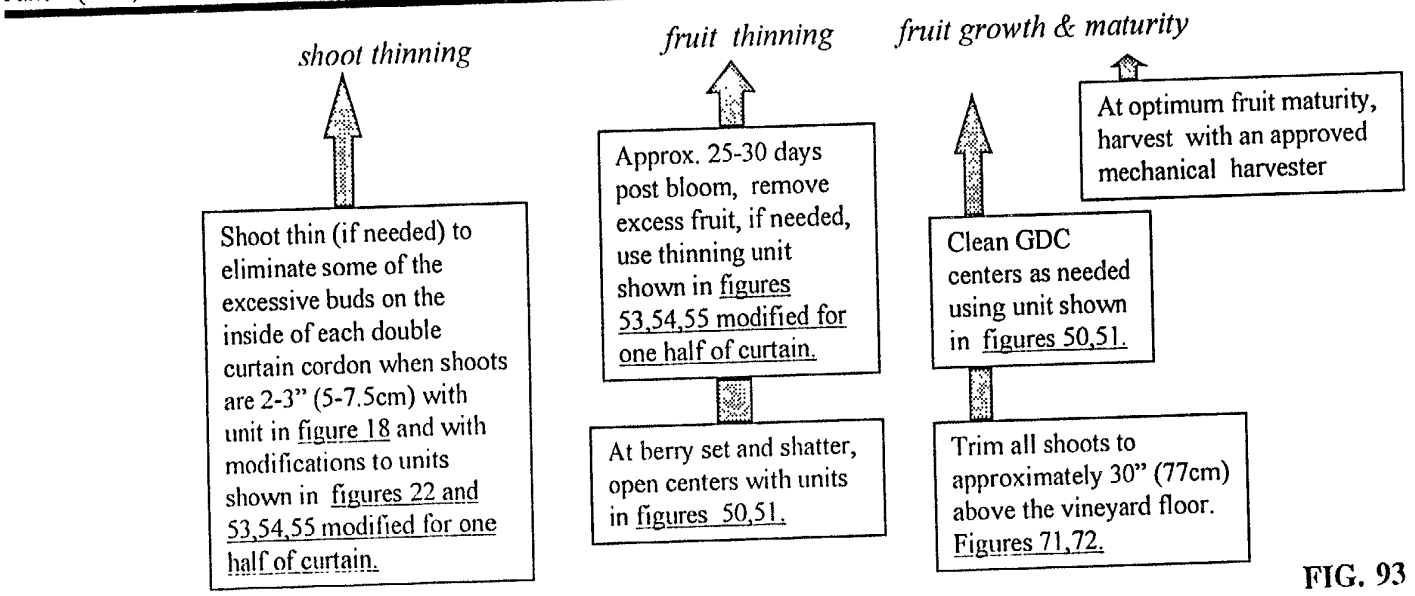


FIG. 93

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

IX. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS PRODUCED ON STANDARD CALIFORNIA T-TRELLIS

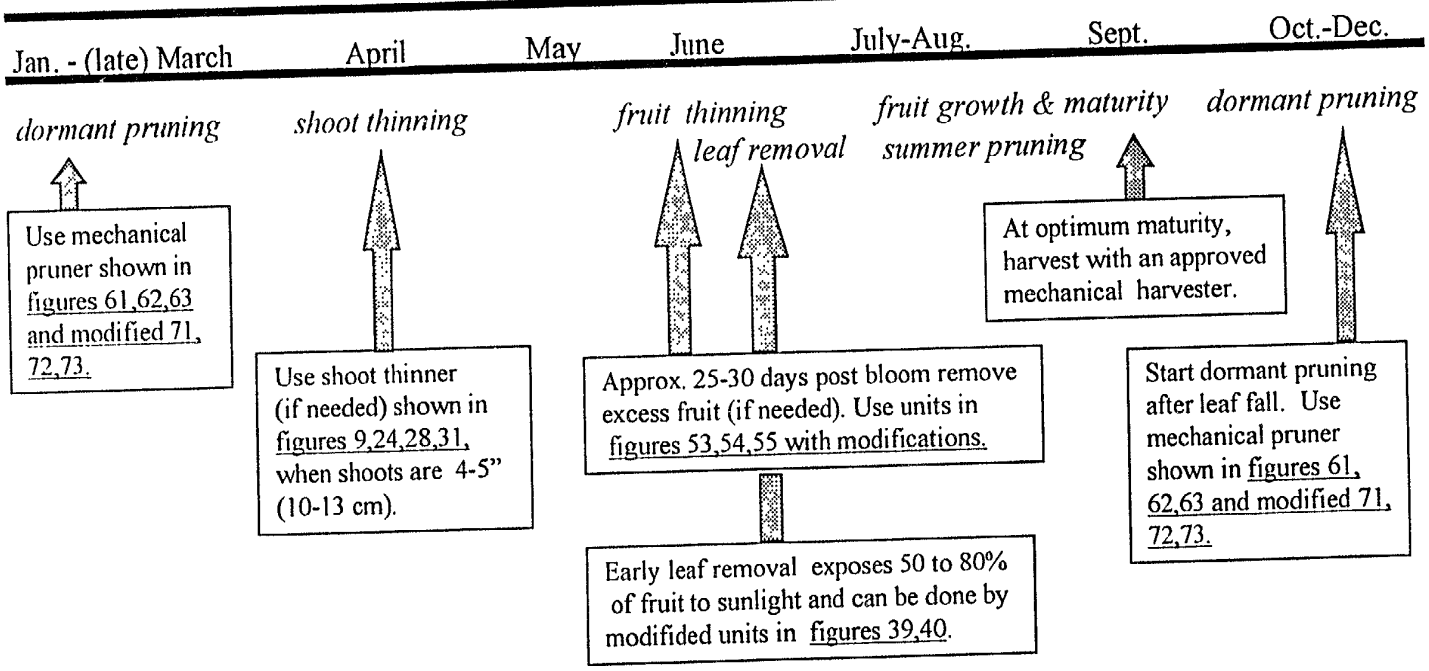


FIG. 94

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

X. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS PRODUCED ON STANDARD VERTICAL MOVEABLE CATCH WIRES

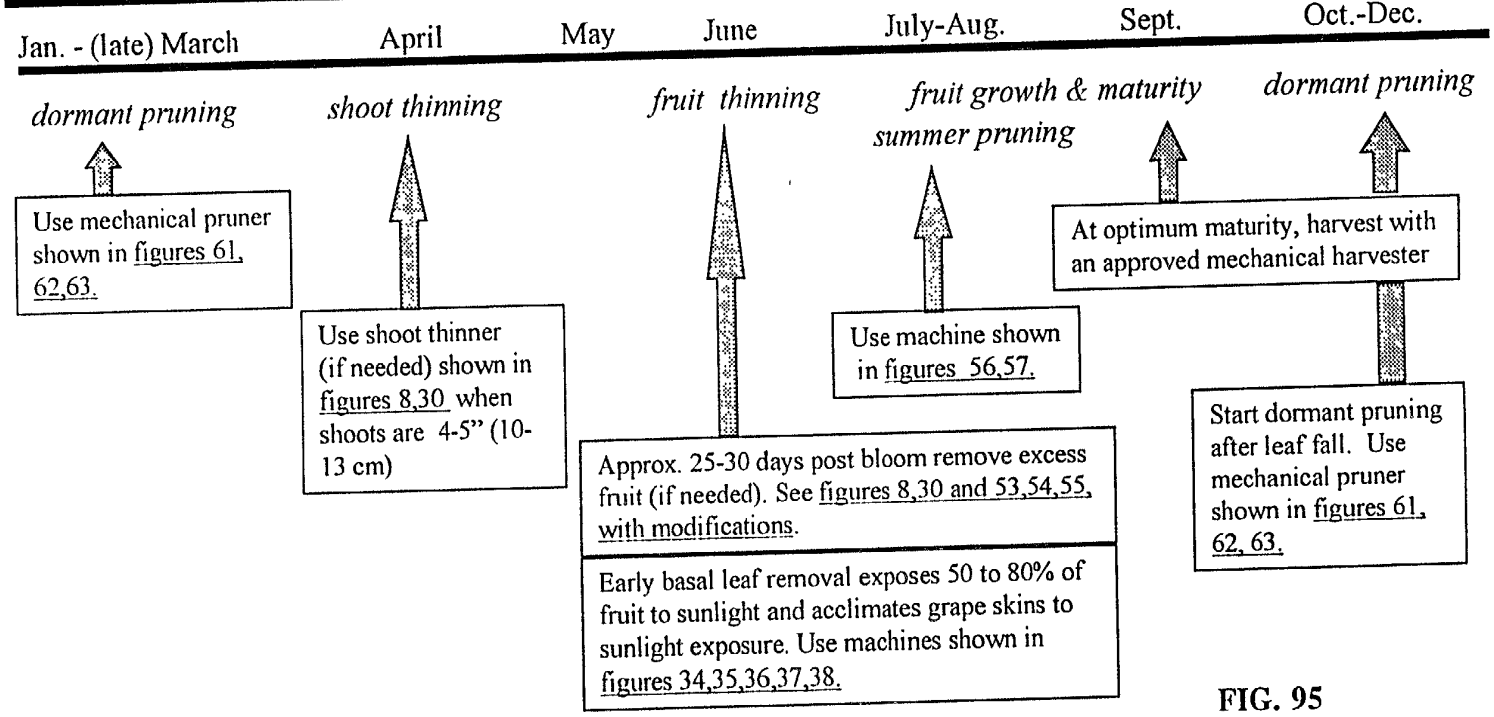


FIG. 95

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

XI. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS PRODUCED ON LYRE OR "U" AND OTHER DIVIDED CANOPY TRELLISES

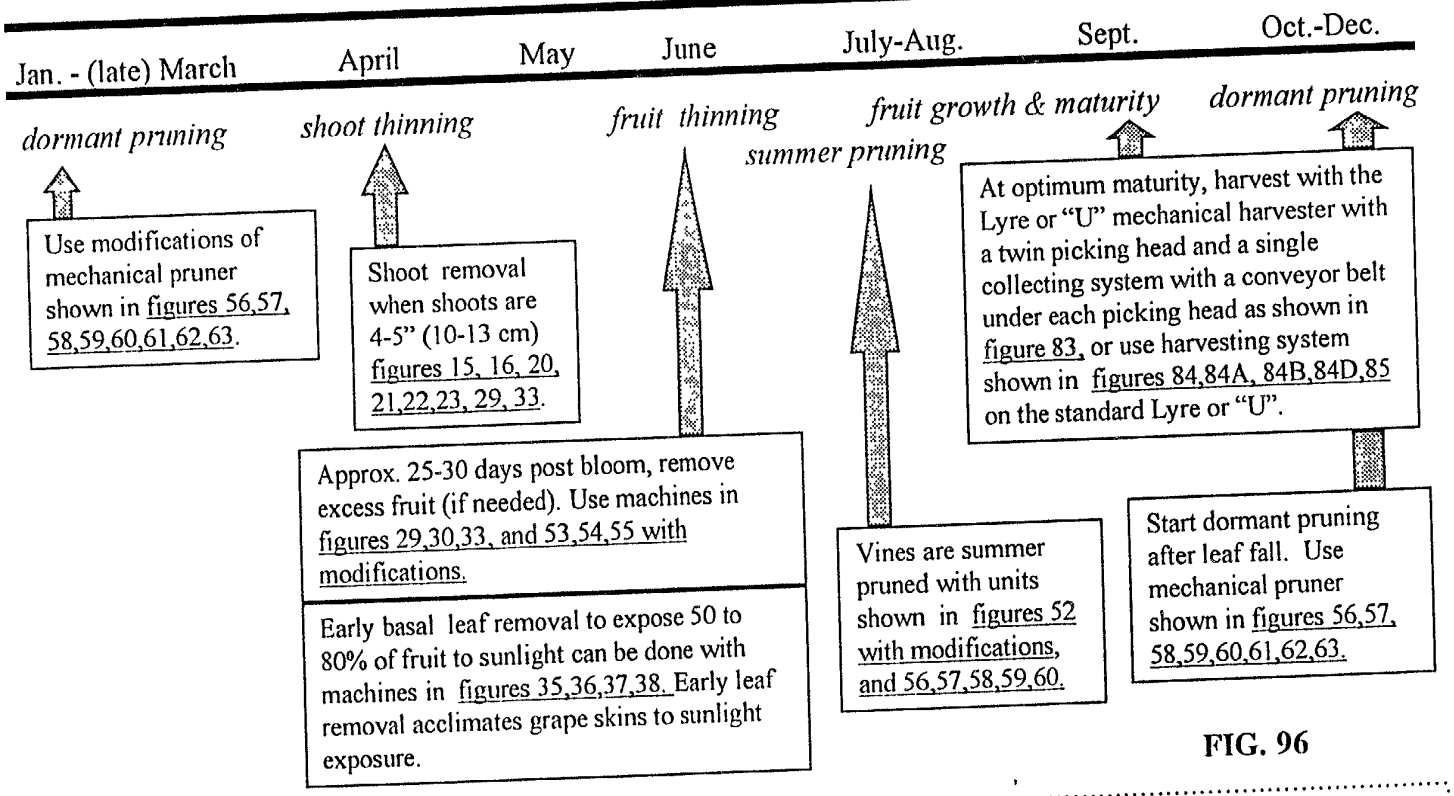


FIG. 96

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.

XII. SEASONAL CHART FOR VINEYARD MECHANIZATION ACTIVITIES OF VITIS VINIFERA AND FRENCH AMERICAN HYBRIDS ON SMART-DYSON BALLERINA (and similar) TRELLISING SYSTEMS.

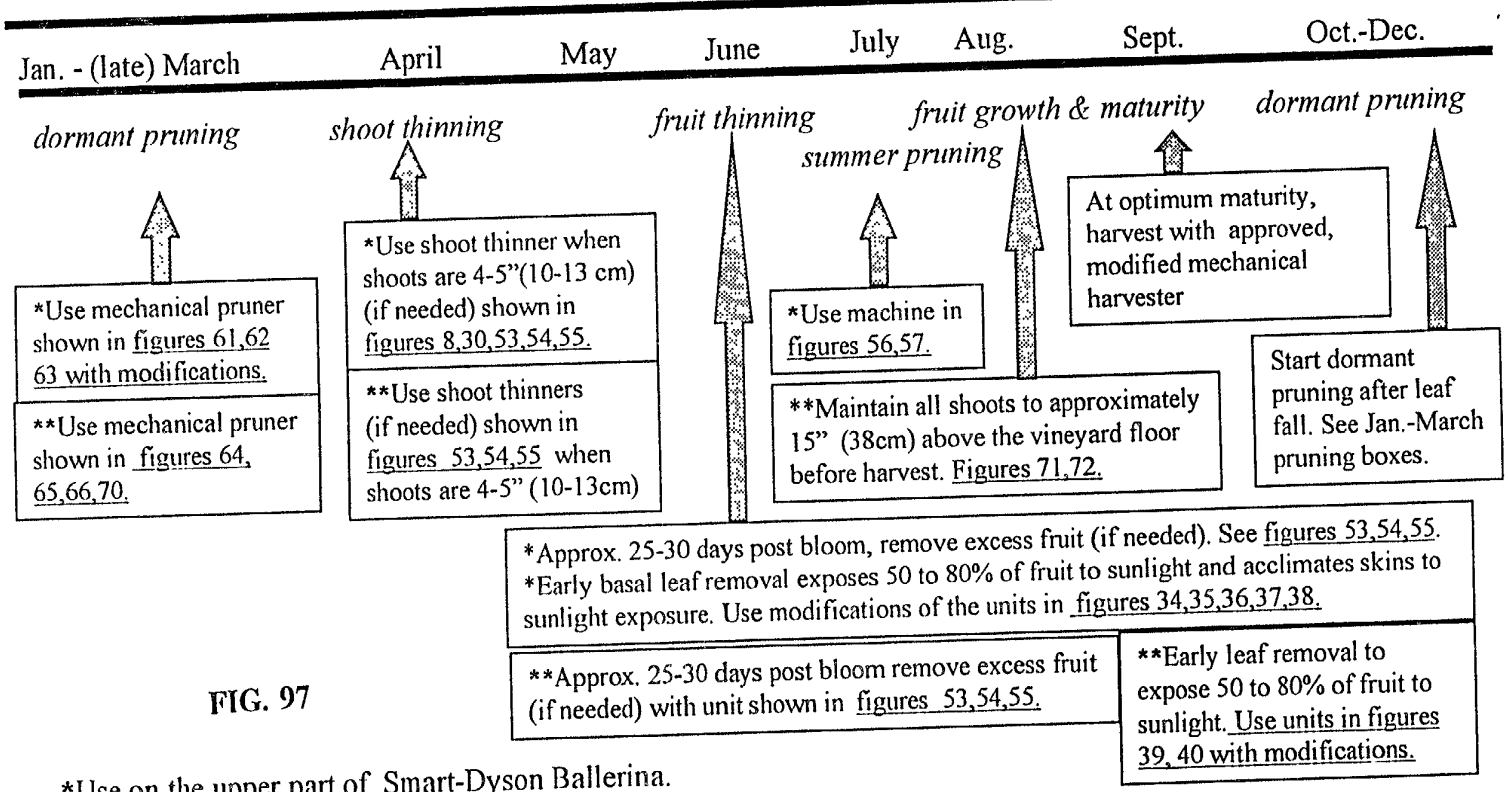


FIG. 97

*Use on the upper part of Smart-Dyson Ballerina.

**Use on the lower part of Smart-Dyson Ballerina.

Exact date of each operation will depend on the viticultural region. The exact date can vary from region to region by as much as 3-4 weeks (depending on the cultivar). Therefore, mechanical operation should be based on physiological growth of the vine. Of course, the seasons in the southern hemisphere are opposite.